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ABSTRACT

The Alabama Aviation and Technical College, working with representatives of the aviation industry, the military, the Alabama Department of Aeronautics, and the Federal Aviation Administration, developed a training program for aviation maintenance technicians. The program also aimed to emphasize and expand opportunities for minorities, females, and other underrepresented groups to move rapidly into high-demand, high-salaried technician jobs in the aviation industry. During the project, the groups worked together to strengthen instruction, to eliminate duplicate paperwork in combining courses for mechanics and avionics, and to incorporate general education courses so that students could earn associate degrees. The course schedule was changed from a full-time technical model to collegiate scheduling, which allowed students to attend part time. Recruiting materials were developed. As a result of changed schedules and heavy recruiting, more than 50 students were enrolled, with 40 percent from underrepresented groups (11% are females and 18% are minorities). The project developed a vocational training model and curriculum that can be replicated for use in other two-year technical colleges. (A college catalog and recruiting materials are included in this document.) (Author/KC)

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ALABAMA AVIATION AND TECHNICAL COLLETE

COOPERATIVE DEMONSTRATION PROGRAM (HIGH TECHNOLOGY)

OFFICE OF VOCATIONAL AND ADULT EDUCATION,
U.S. DEPARTMENT OF EDUCATION

COOPERATIVE DEMONSTRATION PROGRAM TO TRAIN AVIATION MAINTENANCE TECHNICIANS

(V199A00082)

FINAL REPORT

June 30, 1991

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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This is the final report on the Cooperative Demonstration Program, V199 A00082, submitted in accordance with provisions of the EVALUATION PLAN.

A copy of the Project Abstract is at Appendix A.

The project evaluation was a continuous process that began in January 1990 and continued through June 1991. Dr. Shirley Woodie, AATC President was informed daily of program progress by the Project Director. Progress reports were also made telephonically each month to the Office of Vocational and Adult Education, U.S. Department of Education. The mid-project report was submitted to the College President, Members of the Curriculum Development Team and the U.S. Department of Education.

The following is an account of project objectives with dates of completion. Also included is a discussion of each objective, records accountability when applicable, and how objectives were reached.

Objective #1. By June 30, 1991, develop and present a series of mini workshops, whereby 80% of faculty and staff will participate in:

(1) An orientation of project objectives.

Completion Date:	Participants:
Jan 18 & 19, 1990	Avionics Technology Faculty
Jan 22, 1990	Administrative Council
Jan 22, 1990	Aviation Maintenance Technology Faculty
Jan 25, 1990	Staff
Feb 14, 1990	Staff and Faculty (Mobile)
Jul 19, 1990	Advisory Committees

Participation was over 90%. Each group was briefed about their anticipated roles that would be played in accomplishing the program objectives. Time was given for questions, recommendations and discussions.

The Curriculum Development Team consisted of the Avionics and Aviation Maintenance Technology faculty, department chairs, and members of industry advisory committees. A list of council members is maintained by the Dean of Instruction.

(2) A mid-project update was completed October 31, 1990. The update was submitted approximately one month after the new syllabi for Aviation Maintenance Technology and Avionics Technology went into effect. Time was provided for the staff and faculty to review schedules, syllabi, lesson plans, class presentations, timing, and all other aspects of the new courses prior to developing the report (Appendix B).

(3) External evaluations were performed by Dr. Tracy

Trussell, Alabama Department of Post-secondary Education. (Appendix C).

(4) An aviation industry program evaluation of new curriculum options was completed June 19, 1991 by Mr. Charles McCormick, Northwest Airlines Training Department (Appendix D).

Objective #2. By June 30, 1991, develop, test, and implement a competency-based core curriculum for Aviation Maintenance Technology and Avionics Technology programs.

Development of the curricula.

(1) Significant factors that impacted on curriculum content include:

(a) FAA Regulation Part 147 mandates 1900 contact hours for Aviation Maintenance Technology airframe and powerplant (A&P) licensure. For each one hour of theory or laboratory the student must have 60 minutes in class, although other courses require only 50 minutes. This was, and continues to be, a scheduling problem when fitting general education courses into a quarterly schedule that is applicable to four college programs. A second problem involved the out-of-date requirements imposed by that regulation, which have not changed since 1974. As a result, material that is no longer applicable to modern aircraft continues to be required as a part of the FAA approved program. Even though it would have been desirable to eliminate some material and replace it with training on state-of-the-art technology, FAA rules made it impossible to make some of the much needed changes.

(b) Southern Association of Colleges and Schools (SACS) accreditation requirements for associate degrees stipulate that there must be provisions for more than one elective from outside the student-selected program. This requirement is in addition to technical and general education courses. Six elective hours have been added to each degree program to meet SACS criteria.

(c) The Alabama Department of Post-Secondary Education limits the number of quarter credit hours for an associate degree. This restriction meant that general education courses could not just be added to existing technical hours; technical hours had to be reduced to accommodate these new requirements. For example, under the old curriculum the Avionics program had 114 hours for technical courses--the maximum allowed. This total had to be reduced to 79 hours without reducing valuable course content. Reduction was accomplished by carefully trimming outdated course content and by increasing the ratio of laboratory hours to theory hours.

(d) State guidelines also mandated collegiate class scheduling to replace the old technical school scheduling system. Under the old technical scheduling system a student had no choice but to follow a rigid sequence from 7:45 a.m. to 3:00 p.m. daily, completing an entire course before going on to the next. This left no options in the event of the necessity to repeat a course nor for night courses or part-time enrollment. Collegiate scheduling eliminated these inflexibilities. All of these changes were included in the state approved 1990-91 College Catalog (Appendix E).

(e) All general education courses were taken directly from the Alabama Guidelines for Converting to Collegiate Scheduling. Course titles, descriptions, and credit hours appearing in the College Catalog are extracted from that document.

(f) All program changes received final approval from the Department of Post-Secondary Education. As a result of that approval, AATC can now offer an associate degree in Avionics Technology in addition to the previously approved associate degree in Aviation Maintenance Technology.

(g) Changes to the Aviation Maintenance Technology program received FAA approval July 24, 1990. SACS approval was not required for either program.

(h) Program evaluations conducted over the period of three quarters brought about additional changes to both curricula. These changes have also been approved by the Department of Post-Secondary Education and appear in the 1991-92 College Catalog.

(2) Content determination strategies were based on involvement of faculty, administrators, students, industry, Federal Aviation Administration and the military.

(a) Faculty members were the backbone of the revised curricula because they possessed the technical expertise and the ability to implement the changes in the classroom. These people were involved from the beginning to the end of the project on a daily basis in task analysis, developing changes to syllabi, lesson plans, and equipment; advising on other matters such as schedules and reorganization of subject matter; and teaching the revised courses. An account of faculty and staff time spent on the project is located in Appendix F.

(b) Student involvement was limited to class participation and evaluations of instructors. Class participation consisted of academic studies, laboratory experiments, and periodic tests. This gave instructors

valuable insight into student reactions to revised materials and a means of comparing results with courses previously taught by the college. No attempt was made to obtain student comparisons of old and new programs because such evaluations could not be conducted in a controlled environment without interrupting the normal scheduling and classroom activities. New evaluation forms were developed and put into effect as an aid to the evaluation process. These completed forms provide Department Chairpersons, Dean of Instruction, and Project Director with a view of the programs as seen through the eyes of instructors and students.

(c) Industry representatives could do the one thing faculty members could not do--define actual industry needs. Since they are the "real world" customers for the college product, they could specify the qualifications a new employee. Members of the technical a d v i s o r y committees were eager to point out to the Project Director the things the college should emphasize in its training programs; how to prepare students for employment in today's workplace. They advised the institution that there are critical shortages of qualified aircraft and avionics technicians today and will continue to be well into the next century. Since new generation aircraft are technologically more and more complex, it is essential that technicians have much more knowledge of electronics. Ideally then, aviation maintenance personnel should be qualified as mechanics and avionics technicians. Thus, the dual track aviation maintenance/avionics technology option, developed as a part of the Cooperative Demonstration Program, received enthusiastic support. They also spoke out for changes to emphasize general education courses that are designed to prepare students to cope with social and personal problems they encounter in day-to-day living. Ethics and Society, Psychology, Speech, and Computer courses became important parts of both degree programs in response to industry concerns.

(d) The revised Aviation Maintenance Technology curriculum was approved in June 1990 by the FAA without modification. At that time the regulation governing education requirements was being changed by that agency. As a result, some of the desired changes in the curriculum could not be made. It is anticipated that the revised regulation will be published in late 1991.

(e) The military was very supportive in AATC attempts to obtain equipment that could be used effectively in student training. Unfortunately, most of the equipment that was available through military sources was old technology that has little application to the revised courses. Since military services have their own specialized maintenance training programs that do not

require FAA program approval or licensure, there are limited requirements for participation in the programs by personnel on active duty.

(3) The primary way the needs of underserved populations are met through changes in these two programs is that associate degrees can now be a reality. The degrees are now possible because the required 35 hours of general education courses were integrated into each program, making it possible for students to earn a degree while undergoing technical skills training. Opportunities for a certificate or degree for underserved populations are enhanced as a result of collegiate scheduling that was implemented when these programs were restructured. Students are able for the first time to enroll on a "part-time" basis while continuing full or part time employment. The intensive recruiting campaign has made minorities and women aware that aviation maintenance training is no longer restricted to white males.

(4) The curriculum framework is contained in the College Catalog. The Catalog contains the philosophy and goals of the institution, students served, institutional and support staff, curriculum arrangements, and course content. The employment setting is contained in the college Personnel Handbook which was revised in the fall of 1990. Upcoming revisions of these two publications contain other changes that have been brought about through the Cooperative Demonstration Program.

(5) All courses have measurable performance objectives that appear in each syllabus and meet the goals of the curricula. Revised syllabi and lesson plans are on file in each department as evidence of these facts.

After the core curriculum content was established, all of the other requirements set forth in Objective #2 were accomplished within established time lines except the pilot test. The time line for completion of the pilot test was July 1990. This was unrealistic in that the approved programs that were in effect at that time could not be interrupted for a pilot test. Pilot testing began in September 1990 when the approved revised programs became effective. The pilot test and evaluations went on simultaneously throughout the fall, winter, and spring quarters. Results will appear in the 1991-92 College Catalog and revised course syllabi. An account of the time lines appears at Appendix G.

Objective #3. By June 30, 1991, develop, test, and implement courses to meet the general education requirements of degree programs in Aviation Maintenance Technology and Avionics Technology.

(1) Seven general education courses were selected as a core curriculum for both degrees. The seven are Composition I, Computer Fundamentals, College Mathematics, Introduction to Physics, Ethics and Society, General Psychology, and Fundamentals of Speech. All are five quarter hour courses. The three courses that are also mandatory for a certificate are: Composition I, College Mathematics, and Introduction to Physics. A student who completes certificate requirements has only four more general education courses to complete for an associate degree. All of these courses have been offered since fall quarter 1990 and were examined by the Commission on College (COC) accreditation team in February 1991. COC accreditation was granted to the college in June 1991 based on results of the February evaluation.

(2) This general education curriculum and one common technical course (Aircraft Electronics) along with the previously discussed reduction in technical course hours make it possible for students to obtain both degrees in 12 quarters or less.

(3) All of the part-time faculty employed to teach general education courses have met all state and COC requirements. They have fulfilled all of the conditions specified for syllabus development--including course content, teaching methodologies, materials, and evaluations. General education courses have been scheduled to maximize enrollment and in a sequence that ensures that students will have the opportunity to complete all required courses. Some scheduling formats could not be used because part-time instructors are not always available at the desired times. An additional scheduling problem results from the need to make technical laboratories at least two hours in length restricting the times available for general education courses.

(4) The Director of the Learning Resources Center coordinated the acquisition of materials to support the general education courses. Records in the College Comptroller's office show that a total of $41,900.00 from the grant was spent on more than 750 books, microfiche, software, and other resources. This material was a significant factor in the College receiving Southern Association of Colleges and Schools accreditation this year.

(5) Industries and the U.S. Army were very helpful in obtaining expensive training equipment at no cost, or minimal cost, to the college, Major items of equipment obtained as a result of the grant include a Cessna 172, Allison turbine engine, 12 aircraft engine magnetos, and other assorted aircraft parts.

Objectives 4 and 5. By September 1990, recruit and enroll a minimum of 50 students (at least 30% from underrepresented populations) in the new dual track AMT/Avionics program whereby 75% of the students complete the 11 quarter program by May 1992. Also recruit and enroll a minimum of 50 students (at least 30% from underrepresented populations) into the general education curriculum.

(1) Recruiting materials (Appendix H) were developed to advertise the new training options. Major emphasis was placed on informing females and minorities of the value of careers in aircraft and avionics maintenance. As a result, over 50 percent of new students are enrolling in the dual track program of which over 40% are from underrepresented populations; 11% are female and 18% are minorities. To date, 61 entering students have selected the dual track option. Each quarter has shown an increase over the previous quarter.

(2) It is not possible to report on the percent of students to complete the dual track program because the program is only in its fourth quarter.

(3) All of the students who enter these programs enroll in general education courses unless they have previous credit for them. Of these, over 40% are from underrepresented populations.

(4) Since this program began, the recruiter has made presentations in 58 high schools; established and maintained liaison with 504 counselors; coordinated with employment offices and veterans affairs offices throughout the state; and coordinated direct mail to more than 2900 persons on mailing lists.

Outcome Measures.

(1) The AATC faculty and staff were informed of all activities through the duration of the project primarily through their participation in the program. In addition, results of their efforts appeared in the College Catalog, syllabi, and mid-project and final reports.

(2) The new dual track option meets or exceeds the needs stated by industry and will prepare students to become highly skilled aviation technicians.

(3) General education courses offered in the associate degree programs are designed to prepare students to cope with social and personal aspects of life as they become employed as aviation technicians.

(4) Recruiting materials and strategies have accomplished their design objectives by attracting students from underrepresented populations.

(5) The revised programs have been in effect since September 1990; therefore, the first students to complete either program will be after Spring Quarter 1992.

(6) Cooperative agreements with DYNCORP, Pemco Aeroplex, Army Aviation, and the FAA have been strengthened. Expansion of Southern Aero, an aviation company located on the airport shared by AATC, has provided more opportunities for AATC students. Other training opportunities are now being provided for students through aircraft familiarization courses taught at no cost to AATC by Northwest Airlines instructors.

Dissemination.

a. Copies of this final report will be available through the FAA Education Resource Center at Alabama Aviation and Technical College.

b. The Project Director made a presentation titled "College and Industry - A Cooperative Effort" at the National Congress on Aviation and Space Education convention April 4, 1991. Complete details of how the program was developed and the resulting changes in AATC programs were provided in three one-hour sessions.

Budget and Cost Effectiveness

The entire project remained within the approved budget and required no revisions. A summary of expenditures appears at Appendix I. Detailed records of all expenditures are on file in the College Comptroller's office.

APPENDIX A

PROJECT ABSTRACT

PROJECT ABSTRACT

Project Title: Cooperative Demonstration Program to Train Aviation Maintenance Technicians

Target Population: Persons interested in high technology training in aviation maintenance with emphasis on minorities, females, and other underrepresented groups.

Purpose/Objectives: The purposes of this project are (1) to train persons to become skilled aviation maintenance technicians in an industry that is experiencing a nationwide shortage of certified aviation technicians, (2) to demonstrate successful cooperation among the private sector, public agencies, and the military in training certified aviation maintenance technicians, and (3) to emphasize and expand opportunities for minorities, females, and other underrepresented groups to move rapidly into high-demand, high-salaried technician jobs in the aviation industry.

Procedures/Activities: Alabama Aviation and Technical College will work with representatives of the aviation industry, the military, the State Department of Aeronautics, and the Federal Aviation Administration to develop a training program for aviation maintenance technicians. These groups will restructure the College's current seven-quarter Aviation Maintenance Technology curriculum and the six-quarter Avionics Technology curriculum to (1) strengthen instruction in emerging technologies, (2) eliminate duplicative coursework in the two programs and thereby shorten the time required for students to earn both the airframe and powerplant (A&P) and Federal Communiation Commission (FCC) licenses, and (3) incorporate general education courses that will enable students to earn associate degrees. Dissemination of the project activities will be conducted primarily through the Federal Aviation Administration (FAA) Education Resource Center that will be established on the College campus in September, 1989.

Outcomes/Results/Products: The project will result in a replicable vocational training model and curriculum which addresses the national need for aircraft technicians trained in emerging technologies. Furthermore, the project will result in a model that demonstrates: (1) the special capabilities of a two-year technical college to respond quickly and effectively to training for emerging technologies by strengthening partnerships with industry and government agencies, (2) the capability of a technical college to serve the educational needs of underserved populations, and (3) cooperation between educational institutions with specialized programs, government agencies which regulate those programs, and industries and businesses which employ graduates from those programs.

APPENDIX B

MID-PROJECT REPORT

COOPERATIVE DEMONSTRATION PROGRAM (V 199 A000 82)

MID-PROJECT REPORT

OCTOBER 31, 1990

TO: Dr. Woodie
Dr. Flowers
Mr. Fergus
Mr. Burns
Mr. Foote

This summary is submitted to the Administrative Council as required by timelines of the Cooperative Demonstration Program. A copy of this report will be sent to the U. S. Department of Education.

The Cooperative Demonstration Program began as scheduled January 2, 1990. The project director and recruiter began their work on January 8, 1990. The project secretary was employed February 1, 1990.

The following is an account of the program objectives:

(2) OBJECTIVES 1, 2, and 3:

Task	Target Schedule	Completed
Employ staff	Jan 90	Jan 90
Assemble team	Jan 90	Jan 90
Conduct orientation	Jan 90	Feb 90
Determine core curriculum	Mar 90	Mar 90
Prepare course syllabi	Mar 90	May 90
Prepare flight draft	Apr 90	Mar 90
Identify and secure instructional materials and equipment	May 90	Sep 90
Acquire instructional equipment and supplies	Apr 90	Sep 90
Prepare second draft	May 90	May 90
Test second draft	May 90	Ongoing
Complete final draft	May 90	May 90
Design course schedules	Jun 90	Jun 90
Pilot test course	Jul 90	Ongoing
Prepare course schedules	Jul 90	Aug 90
Begin first quarter	Sep 90	Sep 90

Course syllabi could not be completed by March 1990 because the first program drafts were not completed until March (one month ahead of schedule). After the first draft was completed, instructors were given until the end of May to prepare final course syllabi.

Test of the second draft and pilot testing the courses are ongoing because evaluations of the courses could not begin until the programs were implemented in September. Evaluations will continue through the fall quarter and appropriate changes will be made based on the experience gained by the curriculum development team. Further evaluations will be made during the winter and spring quarters.

(2) OBJECTIVES 4 and 5:

Task	Target Schedule	Completed
Develop recruitment materials and strategy	Jan 90	Jan 90
Design and implement presentation for minority students	Feb 90	Feb 90
Establish and maintain contact with high schools	Jan 90 - Jun 91	Jan 90 & Ongoing
Begin direct mail campaign	Jan 90	Apr 90
Establish special counselling activities	Mar 90	Mar 90
Maintain contact with state and veterans agencies	Jan 90 - Jun 91	Jan 90 & Ongoing
Administer special support services	Sep 90 & Ongoing	Sep 90 & Ongoing

(3) All travel funds except approximately $600 have been spent. The remaining amount is for travel to the National Congress on Aviation and Space Education Convention in April 1991.

(4) Materials for Learning Resource Center: Approximately $21,000 has been spent on materials. An additional $9,000 will be spent by January 1, 1991, and the balance spent by April 1, 1991, thereby fulfilling all program resource requirements.

(5) Contractual: A technical writer was hired for 240 hours for the period April 2 through May 23, 1990, to assist in curriculum development. The remaining 160 hours allocated for a technical writer will be spent in the Spring of 1991 in finalizing the project.

(6) Equipment: Since the Cooperative Demonstration Program did not provide for procurement of equipment, a great deal of time has been spent by the director in identifying equipment needs and finding sources for the required equipment. To date, Pemco Aeroplex, Northwest Airlines, Teledyne Continental, Alabama Highway Patrol, Alabama State Aviation Office, Alabama Forestry, U. S. Government Services Administration, Pratt and Whitney, and U. S. Army Aviation Systems Command have been very helpful in obtaining training equipment.

(7) Instructors: Fully qualified instructors have been hired as required to develop and teach the general education courses outlined in the project plan. Funding will be adequate to fulfill all project requirements for instructor personnel through the Spring Quarter 1991.

(8) Summary: The Cooperative Demonstration Program is on track in every respect. All objectives will be reached or exceeded by the timelines specified for program completion.

James P. Wall
Program Director

APPENDIX C

EXTERNAL EVALUATION

ALABAMA DEPARTMENT OF POSTSECONDARY EDUCATION

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June 28, 1991

Dr. Shirley Woodie, President
Alabama Aviation & Technical College
P.O. Box 1209
Ozark, Alabama 36361-1209

Dear President Woodie:

The enclosed evaluation report is provided to you as a result of my review of the Cooperative Demonstration Program to Train Aviation Maintenance Technicians. The college should be commended for the accomplishments made by this project. The college will continue to benefit from the activities that have taken place in the past two years in this program. The federal funds have been well utilized to facilitate positive changes in this program and in the college. It was my pleasure to serve as an evaluator of this program.

The cost of my expenses will not be requested. Maybe the college will be able to find other uses for those dollars. Thank you for this experience.

Sincerely,

Tracy Trussell

Tracy Trussell,
Director of Instructional Services

ALABAMA AVIATION AND TECHNICAL COLLEGE

COOPERATIVE DEMONSTRATION PROGRAM TO TRAIN AVIATION MAINTENANCE TECHNICIANS

PROJECT EVALUATION

An evaluation has been completed of the Cooperative Demonstration Program to Train Aviation Maintenance Technicians at Alabama Aviation and Technical College. An on-site evaluation visit was conducted on May 31, 1991, by Dr. Tracy Trussell. Additional information, exhibits, and data related to project objectives were provided to Dr. Trussell before and after the visit. The evaluation comments are provided to assist the college in completing the federally funded project and to provide suggestions for future efforts to continue the worthy goals of the grant.

The grant provided assistance to the college to restructure the college's Aviation Maintenance Technology Program curriculum to (1) strengthen instruction in emerging technologies, (2) eliminate duplicative coursework in the two programs and thereby shorten the time required for students to earn both the airframe and powerplant (A&P) and Federal Aviation Administration (FAA) licenses, and (3) incorporate general education courses that will enable students to earn associate degrees. These three activities were designed to: (1) train persons to become skilled aviation maintenance technicians in an industry that is experiencing a nationwide shortage of certified aviation technicians, (2) demonstrate successful cooperation among the private sector, public agencies, and the military in training certified aviation maintenance technicians, and (3) emphasize and expand opportunities for minorities, females, and other under represented groups to move rapidly into high-demand, high-salaried technician jobs in the aviation industry.

OBJECTIVE #1

By June, 1991, to develop and present a series of mini-workshops, whereby 80 percent of faculty and staff will participate in:

(1) An orientation to project objectives
(2) A mid-project update
(3) An aviation industry program evaluation of new curriculum options

EVALUATIVE COMMENTS

Alabama Aviation and Technical College personnel were knowledgeable of the Cooperative Demonstration Project during the on-site visit. The college provided documents to verify the activities conducted to inform and up-date the faculty and staff about the project. Industry representatives were involved with the review of the curriculum revisions by providing advice and direction to making the new curriculum responsive to their needs. This involvement included but was not limited to participation in Aviation Maintenance Technology Program Advisory Committee functions, specialized training programs sponsored by the college and industry, and technical assistance to the project.

OBJECTIVE #2

By June, 1991, to develop, test, and implement a competency-based core curriculum for Aircraft Maintenance Technology and Avionics Technology whereby students can complete both programs in eleven quarters.

EVALUATIVE COMMENTS

The Associate in Applied Science Degree has been developed to prepare students in the airframe and powerplant licenses within the eleven quarters. The Associate in Applied Science Degree Program in Aviation Maintenance Technology totals 140 quarter hours. The general education courses and core technical courses, applicable to both areas have been developed to prevent duplication and to reduce time required of students. The curriculum has been reviewed by industry and appropriate agencies for quality measures. The degree was first offered in the Summer Quarter, 1990 with a total of 8 students. The college had an enrollment of 59 reported in the Fall Quarter, 1990. Therefore, the new program has attracted students.

OBJECTIVE #3

By June, 1991, to develop, test, and implement courses to meet the general education requirements of degree programs in Aviation Maintenance Technology and Avionics Technology.

EVALUATIVE COMMENTS

Alabama Aviation and Technical College received full membership from the Commission On Colleges (COC) as a degree granting institution at its June, 1991 meeting. The accreditation confirms the efforts of the Alabama Aviation and Technical College to add the general education courses required to up-grade the degree programs. The Aviation Maintenance Technology and Avionics Technology Programs have incorporated the additional general education courses which strengthens the education received by students in these two programs. The program outlines included in the 1991-92 catalog contain these general education courses.

OBJECTIVE #4

By September, 1990, to enroll a minimum of fifty students (at least 30 percent from underserved populations) in the new dual track AMT/Avionics program and for 75 percent of the students to complete the 11 quarter program by May, 1992.

EVALUATIVE COMMENTS

The enrollment for the Aviation Maintenance Technology Program as reported on the Alabama Aviation and Technical College Enrollment Reports for each quarter from Fall Quarter, 1989 to Winter Quarter, 1991 are included in Table 1. The program contains certificate and diploma options in the fall of 1989. The Associate of Applied Technology (AAT) Degree Program was added in the summer of 1989. The AAT Degree will change the summer of 1991 to the Associate of Applied Science (AAS) Degree with COC Accreditation.

TABLE 1

QUARTER	AWARD	HEADCOUNT FT	HEADCOUNT PT	RACE C	RACE M	SEX M	SEX F	CREDIT HOURS
FA 89	DIPLOMA	216	10	195	31	212	14	1323
WI 90	DIPLOMA	208	19	198	29	211	16	3708
SP 90	DIPLOMA	225	6	207	24	220	11	3857
SU 90	DIPLOMA	180	11	170	21	177	14	3211
SU 90	AAT	8	0	6	2	7	1	(INCLUDED ABOVE)
FA 90	CERT.	1	0	1	0	1	0	4487
FA 90	DIPLOMA	182	10	165	27	180	12	(INCLUDED ABOVE)
FA 90	AAT	57	2	48	11	56	3	(INCLUDED ABOVE)
WI 91	AAT	258	9	227	40	250	17	(INCLUDED ABOVE)

Table 1 provides data to show that the students are enrolling in the AAT (AAS) program rather than the diploma or certificate programs. Therefore, the student interest in the degree option has proven to be successful in addressing the students' desire for a more complete education. The completion rate of the program can not be evaluated until the students have had an opportunity to complete the eleven quarter program.

The number of minority students enrolled in this program as compared to the Caucasian enrollment has increased during the period of this Cooperative Demonstration Project (31 to 40). While the increase of all enrollment numbers (226 to 267) may not reflect the desired 30 percent of enrollment; the Cooperative Demonstration Project activities have continued through the spring of 1991 and should result in greater participation of minority students in the future. The direction is positive for greater numbers of minority students. The 30 percent goal of underserved students also included the female population as under represented.

Table 1 reflects an increase of female students (14 to 17) during the project timelines. However, the college has continued the emphasis on recruiting female students and these numbers should be larger in the future. As a role model to promote females in the program, the college should be commended for selecting a former female graduate to represent Alabama Aviation and Technical College in the Outstanding Alumni Competition for the Alabama College System. The former female student was selected as the Outstanding Technical College Alumni for the State of Alabama in the fall of 1990.

The results of the Cooperative Demonstration Project are positive for this objective but the desired goals were not achieved. The total impact of the project cannot be evaluated at this time. The evaluator would suggest an additional follow-up of this objective after at least one more year. This goal should be continued for the Aviation Maintenance Technology Program.

OBJECTIVE #5

By June, 1990, to enroll a minimum of 50 students (at least 30 percent of whom are from underserved populations) in the general education curriculum.

EVALUATIVE COMMENTS

The college had a total enrollment of 8 students in the summer of 1990 in the AAT Degree Program. The enrollment in the AAT Degree Program for the fall of 1990 was 59. The total program enrollment (267) for the Aviation Maintenance Technology Program was reported to be in the AAT Degree for Winter Quarter, 1991. This objective has been accomplished. The college should be commended for the success in this area.

SUMMARY

The Cooperative Demonstration Project at Alabama Aviation and Technical College has contributed significantly to the improvement of the Aviation Maintenance Technology Program. The college will continue to benefit from the activities that have taken place in the past two years in this program. The federal funds have been well utilized to facilitate positive changes in this program and in the college.

APPENDIX D

INDUSTRY PROGRAM EVALUATION

NORTHWEST AIRLINES

June 18, 1991

Alabama Aviation And Technical College
ATTN: Mr. Wall
P.O. Box 1209
Ozark, AL 37361

Subject: Evaluation of AATC Aviation Maintenance Training

Over the past year I have visited Alabama Aviation and Technical College (AATC) to participate in Job Fairs and to teach Northwest Airline sponsored DC-9 Familiarization courses to faculty and students. During the time spent on their campus I had the opportunity to observe classroom and laboratory training being conducted.

Past experience with AATC graduates who are employed by Northwest Airlines indicated that the training received at that institution gave them the technical competence necessary for successful aviation maintenance careers with our company and other aviation industries. The only deficiency noted was the narrow technical orientation of the aviation maintenance programs taught by the college. There were limited opportunities for students to broaden their horizon beyond purely technical skills. This seems to be a common characteristic of numerous technical schools. In a significant change for the past , general education courses were added to the AATC Aviation Maintenance Technology and Avionics Technology associate degree programs in the fall of 1990. The college reacted positively to aviation industry recommendations to go beyond technical needs and consider social and human relations needs by adding such courses as Introduction to Computers, Speech, Psychology, and Ethics and Society.

Even though mathematics and physical science were parts of previous technical courses, students could not receive college credit for them. The new curricula makes it possible for mathematics and physics, plus at least five other general education courses, to not only count toward an associate degree but also applied toward a four year degree at other colleges.

This emphasis on general education should make adapting to life after graduation much easier and also provide better opportunities for advancement in the aviation industry.

Because the new curricula have not been in effect long enough for thorough evaluations of graduates, I will reserve comments on program outcomes to a later date. However, I feel very confident that future AATC graduates and the aviation industry will realize significant benefits from the changes brought about through the Cooperative Demonstration Program.

As a result of the increasing complexity of systems on new technology aircraft used by airlines, it is essential that maintenance personnel be capable of testing, analyzing, and repairing electronics associated with various on-board systems. For example, electronic components are integral to virtually all flight control systems. Thus, repair of these systems involves knowledge of both electronics and mechanics.

The new AATC dual track maintenance/avionics program is an important option that will provide people for industry who have the essential skills to work on electro-mechanical devices.

Sincerely,

Charles McCormick

APPENDIX E

COLLEGE CATALOG EXTRACT

PROGRAMS OF STUDY

ama Aviation and Technical College offers the following programs of
ly: Automotive Technology, Aviation Maintenance Technology, Avionics
hnology, Flight Technology, General Aviation Technology, and General
ation Technology Correspondence Program. The Off-Campus Center in
bile offers programs of instruction in Aviation Maintenance Technology
General Aviation Technology. Each program of study includes course
k offered through the College's general education program.

ama Aviation and Technical College awards the Associate in Applied
nce degree in Flight Technology, in Avionics Technology, and in Avia-
Maintenance Technology. The College also awards diplomas in Auto-
ive Technology, in General Aviation Technology, and in General
ation Technology Correspondence. Students may earn certificates in
ation Maintenance Technology and in Avionics Technology.

criptions of each of the programs of study and the specific requirements
ertificates, diplomas, and degrees follow.

GENERAL EDUCATION

The general education course offerings provide a common core of learning that enables students to move beyond their narrow interests and broaden their perspective. Such courses are designed to help students view their lives in historical and social perspective and to prepare them to meet their social and civic obligations as well as to achieve their career aspirations. The general education courses introduce students to essential knowledge and help them apply that knowledge to contemporary issues and situations.

To qualify for a particular degree, diploma, or certificate, a student must complete both the general education courses and the technical specialty courses specified in the program description for that degree, diploma, or certificate.

Alabama Aviation and Technical College offers the general education courses in the following listing. A description of each course is included in the course description section of this catalog.

GENERAL EDUCATION COURSES

Course			Credit Hours
ENG	101	English Composition I	5
ENG	130	Technical Report Writing	5
BUS	146	Personal Finance	5
BUS	276	Personnel Management	5
CIS	130	Computer Fundamentals	5
MCM	100	Introduction to Mass Communication	5
MTH	100	College Mathematics	5
MTH	108	Elementary Algebra	5
ORI	100	Orientation to College	1
PHY	120	Introduction to Physics	5
PHL	206	Ethics and Society	5
PSY	106	Career Exploration	1
PSY	200	General Psychology	5
PSY	276	Human Relations	5
SPH	106	Fundamentals of Speech	5
THR	120	Theatre Appreciation	5
VTE	101	Technical Communication Skills I	5
VTM	101	Technical Mathematics I	5

AVIATION MAINTENANCE TECHNOLOGY

The various instructional programs offered by the Aviation Maintenance Technology Department are designed to assist students in developing the academic, technical, and professional knowledge and skills required for entry and advancement in the aircraft maintenance career field. Students may pursue certificates and the Associate in Applied Science degree. Students who complete the various curricula may take the appropriate Federal Aviation Administration (FAA) examination. FAA licenses are fundamental to the pursuit of a career as an aircraft maintenance technician.

Instruction is presented in a progressive sequence of theory and laboratory activity. The ratio of theory to laboratory instruction in the technical courses is approximately 50% theory and 50% laboratory instruction throughout the program. Laboratory activities involve student use of training aids, modern equipment, and aircraft to develop manipulative skills and technical competencies typically required of entry level aircraft maintenance technicians.

Each of the curricula offered is described below. Students may complete the Associate in Applied Science degree in Aviation Maintenance Technology by completing a total of 140 credit hours; an Airframe Certificate by completing a total of 75 credit hours; or a Powerplant Certificate by completing a total of 74 credit hours. The specific course requirements for each individual degree, diploma, or certificate program are listed below.

ASSOCIATE IN APPLIED SCIENCE DEGREE

Component	Quarter Hours
Technical Education	99
General Education	35
Electives	6
Total Requirements	140

TECHNICAL EDUCATION

Requirements: Students must complete the prescribed technical education component courses developed and offered by AATC under the approval of the Federal Aviation Administration. The technical education component has been designed to assist students in developing knowledge, skills, and abilities to pursue the Airframe and Powerplant Certificate and to begin preparation for a career in the aviation field.

Courses			Quarter Hours
AMT	111	Aircraft Electronics	7
AMT	121	Materials and Processes	5

AMT	122	Ground Operations, Servicing and Cleaning	2
AMT	123	FARs, Drawings, and Weight and Balance	6
AMT	131	Aircraft Systems I	8
AMT	132	Aircraft Systems II	2
AMT	133	Aircraft Systems III	4
AMT	141	Aircraft Welding	2
AMT	142	Aircraft Sheetmetal Structures	6
AMT	143	Non-Metallic Structures	4
AMT	211	Cabin and Atmospheric Systems	2
AMT	212	Aircraft Hydraulic, Pneumatic and Landing Gear Systems	5
AMT	213	Assembly, Rigging and Airframe Inspections	5
AMT	214	Airframe Comprehensive Testing	2
AMT	221	Reciprocating Engines	7
AMT	222	Fuel and Induction Systems	3
AMT	223	Ignition Systems	3
AMT	231	Propellers	3
AMT	232	Introduction to Helicopters	2
AMT	233	Reciprocating Engine Troubleshooting and Inspections	7
AMT	241	Turbine Engines	5
AMT	242	Turbine Engine Systems and Inspections	5
AMT	243	Employment Seminar	2
AMT	244	Powerplant Comprehensive Testing	2
		Total Technical Education Hours	99

GENERAL EDUCATION

Requirements: The courses comprising the general education component of the degree program are designed to assist students in developing knowledge, abilities, and attitudes to live successfully in a rapidly changing world where communication, computation, personal and professional growth, and citizenship skills are essential.

Courses	Quarter Hours
Communication Skills	10
ENG 101 English Composition I	5
SPH 106 Fundamentals of Speech	5
Mathematics, Natural Sciences and Computer Sciences	15
MTH 100 College Mathematics	5

PHY 120 Introduction to Physics 5
MTH 108 Elementary Algebra 5
OR
CIS 130 Computer Fundamentals 5

Social and Behavioral Sciences 5
PSY 200 General Psychology 5

Humanities and Fine Arts 5
PHL 206 Ethics and Society 5

Total General Education Hours 35

ELECTIVES

Requirements: Each student, with the assistance of his or her academic advisor, may select courses offered by the college under the auspices of the General Education Department, may select courses from a technical department outside his or her own declared major area of study, or may select a combination of technical and general education courses to satisfy the requirements of the elective component of the degree program.

Students and their advisors should work together to use the requirements of the elective component to tailor the contents of the degree program to the individual student's needs, desires, or interests. The emphasis in course selection should be on broadening the student's perspective.

Students should seek the advice and assistance of their academic advisor in selecting technical courses from other departments if desired to complete a portion of the elective requirement. Courses regularly offered by the General Education Department which may be used to satisfy elective requirements are listed below.

Courses			Quarter Hours
BUS	146	Personal Finance	5
BUS	276	Personnel Management	5
CIS	130	Computer Fundamentals	5
ENG	130	Technical Report Writing	5
MTH	108	Elementary Algebra	5
MCM	100	Introduction to Mass Communication	5
ORI	100	Orientation to College	1
PSY	106	Career Exploration	1
PSY	276	Human Relations	5
THR	120	Theatre Appreciation	5

Total Elective Hours Required 6

AIRFRAME CERTIFICATE

Component	Quarter Hours
Technical Education	60
General Education	15
Total Requirements	**75**

TECHNICAL EDUCATION

Requirements: Students must complete the prescribed technical education component courses developed and offered by AATC under the approval of the Federal Aviation Administration. The technical education component has been designed to assist students in developing knowledge, skills, and abilities to pursue the Airframe Certificate and to begin preparation for a career in the aviation field.

Courses			Quarter Hours
AMT	111	Aircraft Electronics	7
AMT	121	Materials and Processes	5
AMT	122	Ground Operations, Servicing and Cleaning	2
AMT	123	FARs, Drawings, Weight and Balance	6
AMT	131	Aircraft Systems I	8
AMT	132	Aircraft Systems II	2
AMT	133	Aircraft Systems III	4
AMT	141	Aircraft Welding	2
AMT	142	Aircraft Sheetmetal Structures	6
AMT	143	Non-Metallic Structures	4
AMT	211	Cabin and Atmospheric Systems	2
AMT	212	Aircraft Hydraulic, Pneumatic and Landing Gear Systems	3
AMT	213	Assembly, Rigging, and Airframe Inspections	5
AMT	214	Airframe Comprehensive Testing	2
		Total Technical Education Hours	**60**

GENERAL EDUCATION

Requirements: The courses comprising the general education component of this certificate program are designed to assist students in developing knowledge and abilities to successfully practice his or her technical specialty.

Courses			Quarter Hours
ENG	101	English Composition I	5
MTH	100	College Mathematics	5
PHY	120	Introduction to Physics	5
		Total General Education Hours	**15**

POWERPLANT CERTIFICATE

Component	Quarter Hours
Technical Education	59
General Education	15
Total Requirements	74

TECHNICAL EDUCATION

Requirements: Students must complete the prescribed technical education component courses developed and offered by AATC under the approval of the Federal Aviation Administration. The technical education component has been designed to assist students in developing knowledge, skills, and abilities to pursue the Powerplant Certificate and to begin preparation for a career in the aviation field.

Courses			Quarter Hours
AMT	111	Aircraft Electronics	7
AMT	121	Materials and Processes	5
AMT	122	Ground Operations, Servicing and Cleaning	2
AMT	123	FARs, Drawings, Weight and Balance	6
AMT	221	Reciprocating Engines	7
AMT	222	Fuel and Induction Systems	3
AMT	223	Ignition Systems	3
AMT	231	Propellers	3
AMT	232	Introduction to Helicopters	2
AMT	233	Reciprocating Engine Troubleshooting and Inspections	7
AMT	241	Turbine Engines	5
AMT	242	Turbine Engine Systems and Inspections	5
AMT	243	Employment Seminar	2
AMT	244	Powerplant Comprehensive Testing	2
		Total Technical Education Hours	59

GENERAL EDUCATION

Requirements: The courses comprising the general education component of this certificate program are designed to assist students in developing knowledge and abilities to successfully practice his or her technical specialty.

Courses			Quarter Hours
ENG	101	English Composition I	5
MTH	100	College Mathematics	5
PHY	120	Introduction to Physics	5
		Total General Education Hours	**15**

AVIONICS TECHNOLOGY

The various instructional programs offered by the Avionics Technology Department are designed to assist students in developing the academic, technical, and professional knowledge and skills required for entry and advancement in the avionics career area. Students may pursue the Associate in Applied Science degree or a Certificate in Avionics Technology.

Both programs begin with a broad-based approach to the study of electronics and progress to the most advanced and latest solid state avionics circuits and equipment. Theory courses place special emphasis on circuit and system analysis using the latest information and electronic test equipment. Laboratory courses develop technical and manipulative techniques and skills related to analog and digital circuitry through extensive hands-on experience on equipment which is typical of that found in contemporary avionics repair facilities. Special emphasis is placed on laboratory experiences which enable graduates to become readily adjusted and productive in their initial employment experience/setting.

Students must complete 88 credit hours to earn the certificate or 114 credit hours to earn the Associate in Applied Science degree.

ASSOCIATE IN APPLIED SCIENCE DEGREE

Component	Quarter Hours
Technical Education	73
General Education	35
Electives	6
Total Requirements	114

TECHNICAL EDUCATION

Requirements: Students must complete the prescribed technical education component courses. The technical education component has been designed to assist students in developing knowledge, skills, and abilities to begin preparation for a career in the avionics or aircraft electronics field.

Courses			Quarter Hours
AMT	111	Aircraft Electronics	7
AVT	125	Fundamentals of DC	3
AVT	126	Fundamentals of AC	3
AVT	127	Solid State Fundamentals	5
AVT	135	Digital Fundamentals	5
AVT	136	Solid State Circuits	5

AVT	141	Transmitter Principles	4
AVT	145	Advanced Digital Concepts	4
AVT	146	Antenna/Synchro Principles	3
AVT	224	Microprocessor Fundamentals	5
AVT	225	Receiver Principles	4
AVT	226	Frequency Synthesizers	3
AVT	231	Pulse Circuits	3
AVT	232	Common Digital Circuits	3
AVT	241	VOR/ILS	3
AVT	242	Communications/NAV-COMM	3
AVT	243	Transponder/DME	3
AVT	255	Radar/RNAV/Loran	4
AVT	256	Autopilots	3

Total Technical Education Hours **73**

GENERAL EDUCATION

Requirements: The courses comprising the general education component of the degree program are designed to assist students in developing knowledge, abilities, and attitudes to live successfully in a rapidly changing world where communication, computation, personal and professional growth, and citizenship skills are essential.

Courses	Quarter Hours
Communication Skills	10
ENG 101 English Composition I	5
SPH 106 Fundamentals of Speech	5
Mathematics, Natural Sciences and Computer Sciences	15
MTH 100 College Mathematics	5
PHY 120 Introduction to Physics	5
MTH 108 Elementary Algebra	5
OR	
CIS 130 Computer Fundamentals	5
Social and Behavioral Sciences	5
PSY 200 General Psychology	5
Humanities and Fine Arts	5
PHL 206 Ethics and Society	5

Total General Education Hours **35**

ELECTIVES

Requirements: Each student, with the assistance of his or her academic advisor, may select courses offered by the college under the auspices of the General Education Department, may select courses from a technical department outside his or her own declared major area of study, or may select a combination of technical and general education courses to satisfy the requirements of the elective component of the degree program.

Students and their advisors should work together to use the requirements of the elective component to tailor the contents of the degree program to the individual student's needs, desires, or interests. The emphasis in course selection should be on broadening the student's perspective.

Students should seek the advice and assistance of their academic advisor in selecting technical courses from other departments if desired to complete a portion of the elective requirement. Courses regularly offered by the General Education Department which may be used to satisfy elective requirements are listed below.

Courses			Quarter Hours
BUS	146	Personal Finance	5
BUS	276	Personnel Management	5
CIS	130	Computer Fundamentals	5
ENG	130	Technical Report Writing	5
MTH	108	Elementary Algebra	5
MCM	100	Introduction to Mass Communication	5
ORI	100	Orientation to College	1
PSY	106	Career Exploration	1
PSY	276	Human Relations	5
THR	120	Theatre Appreciation	5
		Total Elective Hours Required	**6**

CERTIFICATE IN AVIONICS TECHNOLOGY

Component	Quarter Hours
Technical Education	73
General Education	15
Total Requirements	88

TECHNICAL EDUCATION

Requirements: Students must complete the prescribed technical education component courses. The technical education component has been designed to assist students in developing knowledge, skills, and abilities to begin preparation for a career in the avionics or aircraft electronics field.

Courses			Quarter Hours
AMT	111	Aircraft Electronics	7
AVT	125	Fundamentals of DC	3
AVT	126	Fundamentals of AC	3
AVT	127	Solid State Fundamentals	5
AVT	135	Digital Fundamentals	5
AVT	136	Solid State Circuits	5
AVT	141	Transmitter Principles	4
AVT	145	Advanced Digital Concepts	4
AVT	146	Antenna/Synchro Principles	3
AVT	224	Microprocessor Fundamentals	5
AVT	225	Receiver Principles	4
AVT	226	Frequency Synthesizers	3
AVT	231	Pulse Circuits	3
AVT	232	Common Digital Circuits	3
AVT	241	VOR/ILS	3
AVT	242	Communications/NAV-COMM	3
AVT	243	Transponder/DME	3
AVT	255	Radar/RNAV/Loran	4
AVT	256	Autopilots	3
		Total Technical Education Hours	73

GENERAL EDUCATION

Requirements: The courses comprising the general education component of this certificate program are designed to assist students in developing knowledge and abilities to successfully practice his or her technical specialty.

Courses			Quarter Hours
ENG	101	English Composition I	5
MTH	100	College Mathematics	5
PHY	120	Introduction to Physics	5
		Total General Education Hours	15

APPENDIX F

STAFF AND FACULTY TIME

The following is an account of full time faculty and staff time during the 18 month period. It shows the number of personnel and the percent of their worktime required by the program. The second group of figures indicates the actual number of personnel who participated and the percent of their work time actually spent on the program. Certificates are on file at the college to support these figures.

Personnel	#Required	%Required	#Actual	%Actual
Aircraft Maint. Faculty	2	20 Each	7	7.5 Each
Avionics Faculty	2	20 Each	4	12.5 Each
Dean of Instruction	1	10	1	12.6
Director, Student Devel.	1	10	1	10.0
Counselor	1	10	1	10.1
Avionics Department Chair	1	0	1	11.1
Aviation Maintenance Chair	1	10	1	10.0
Director, Learning Res. Cen.	1	10	1	11.2

All time requirements were met or exceeded.

APPENDIX G

OBJECTIVE TIME-LINES

The following is an account of the program objectives:

(2) OBJECTIVES 1, 2, AND 3:

Task	Target Schedule	Completed
Employ Staff	Jan 90	Jan 90
Assemble team	Jan 90	Jan 90
Conduct orientation	Jan 90	Jan 90
Determine core Curriculum	Mar 90	Mar 90
Prepare course syllabi	Mar 90	May 90
Prepare flight draft	Apr 90	Mar 90
Identify and secure instructional materials and equipment	May 90	Sep 90
Acquire instructional equipment and supplies	Apr 90	Sep 90
Prepare second draft	May 90	May 90
Test second draft	May 90	Mar 91
Complete final draft	May 90	May 90
Design course schedules	Jun 90	Jun 90
Pilot test course	Jul 90	Mar 91
Prepare course schedules	Jul 90	Aug 90
Begin first quarter	Sep 90	Sep 90

(2) OBJECTIVES 4 and 5:

Task	Target Schedule	Completed
Develop recruitment materials and strategy	Jan 90	Jan 90
Design and implement presentation for minority students	Feb 90	Feb 90
Establish and maintain contact with high schools	Jan 90-Jun 91	Jan 90-Jun 91
Begin direct mail campaign	Jan 90	Apr 90
Establish special counselling activities	Mar 90	Mar 90
Maintain contact with state and veterans agencies	Jan 90-Jun 91	Jan 90-Jun 91
Administer special support services	Sep 90-Jun 91	Sep 90-Jun 91

APPENDIX H

RECRUITING MATERIALS

ALABAMA AVIATION & TECHNICAL COLLEGE

AATC FACT SHEET

Background

Established in 1960, AATC is Alabama's only aviation college and the only public two-year college in the southeastern United States whose primary mission is to prepare technicians for employment in the aviation industry. In addition to the main campus in Ozark, Alabama, AATC has a branch campus located on the Brookley Field Complex in Mobile, Alabama.

Programs of Study

AATC offers a highly focused, specialized curriculum: associate degree programs in Aviation Maintenance Technology, Flight Technology, and Avionics Technology and certificate and diploma programs in General Aviation Technology and Automotive Technology. AATC is accredited by the Southern Association of Colleges and Schools, and the Flight Technology and Aviation Maintenance Technology programs are licensed by the Federal Aviation Administration (FAA). In 1989, AATC became the first two-year college in the nation to be designated as an official FAA Education Resource Center.

Economic Impact

- AATC's impact on the state's economy is estimated at more than $14 million annually.

Students

- A total of 538 students are currently enrolled.
- Minorities comprise 16% of the total enrollment and females 9%.
- Seventy-two percent of AATC students are first-generation college students.
- The student-faculty ratio is approximately 20 to 1.

Job Placement

- Approximately 250 students graduate from AATC each year.
- Ninety percent of AATC students graduating between September 1988 and June 1990 were successfully placed with 81% of these placements in the State of Alabama.
- Twice a year, AATC sponsors a Job Fair and employers from throughout Alabama and the nation come to AATC to interview students and graduates.

Employment Outlook

The critical need for skilled aviation professionals is well documented. An aging fleet of aircraft, expansions, retirements, and technological advances have resulted in job openings and shortages:

- FAA projects a shortage of over 40,000 aircraft mechanics by the early 1990's.
- Over 60,000 certified aircraft mechanics will retire in the next several years.
- According to the Future Aviation Professionals of America, the industry will need about 113,000 aircraft mechanics by the end of decade, nearly double the current force.
- The industry will need to hire 53,000 pilots during the next ten years.
- By the year 2002, the majority of the major airlines will retire from 60% to 70% of their currently employed pilots.

P.O. Box 1209 • Ozark, Alabama 36361-1209 • Telephone (205) 774-5113
An Equal Employment/Equal Education Opportunity Institution

VIDEO CHECK-OUT

Now Available

The Alabama Aviation & Technical College Focus

YOU

SEE IT TODAY

FOR MORE INFORMATION

Call or Write:

ALABAMA AVIATION & TECHNICAL COLLEGE

P.O. Box 1209
Ozark, Alabama 36361
(205) 774-5113
or
1-800-624-3468

Alabama Aviation & Technical College Video Focuses on YOU

This new production is a must-see among college videos. It is a fast-moving, colorful presentation that does an extraordinary job of capturing the life and times of the Alabama Aviation & Technical College student.

There is a real feeling of experiencing campus life–

you join in an impromptu volleyball game ..... you sit for the first time in a new class ....you intermingle with friends. And you meet the Alabama Aviation & Technical College people. The AATC video is peppered with real life conversations with AATC students and with faculty members. Their comments are on-the-level and informative.

The narrative of the tape offers comprehensive, practical information covering everything from career opportunities and salaries you can expect to social activities. By the end of the presentation, it is clear that something special exists on campus – an orientation they describe as "The Alabama Aviation & Technical College Focus is YOU."

Don't miss this dynamic, moving video. Check out Alabama Aviation & Technical College's new offering on the college video market. It will leave you with a good feeling.

"An Equal Employment / Equal Education Opportunity Institution"

Check-Out Application

NAME _____

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PHONE _____

HIGH SCHOOL ATTENDING _____

Year of High School Graduation _____

Please return the tape in 12 days. A return label will be provided. Late tapes are subject to a late charge.

CHECK-OUT AGREEMENT

1. The videotape may be borrowed for up to 12 days.
2. After 12 days, the borrower is requested to pay $.50 per day late fee for an unreturned tape.
3. Tapes not returned carry a $29.95 purchase price.

PLACE
STAMP
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ADMISSIONS OFFICE
Alabama Aviation & Technical College
P.O. Box 1209
Ozark, Alabama 36361-1209

"We're Alabama's Aviation College"

BEST COPY AVAILABLE

In 1960, the State of Alabama had the vision and foresight to create a college whose principal mission is aviation education and training. Our state-supported status allows us to combine the attractiveness of low tuition with state-of-the-art training.

Nationally, our competition ranges from high-cost for-profit schools to public colleges that treat aviation education as simply a sideline. In Alabama, we are virtually without competition, and as the song says . . . "Nobody does it better!"

Our logo — "Wings in Ascent" — was designed to represent our progressive spirit, our state-of-the-art technical training, and our growing reputation as the best buy in world-class aviation education.

BEST COPY AVAILABLE

"We're Aviation Education from the Ground Up!"

Alabama Aviation and Technical College is a state-supported institution with a national reputation for quality aviation programs — both on the ground and in the air.

- **AMT** — Our 7-quarter (21 month) Aviation Maintenance Technology (AMT) program teaches you to repair and maintain the structures and engines of both fixed-wing and rotary-wing (helicopter) aircraft. It provides you with the hands-on, practical training needed to pass the FAA exams for airframe and powerplant licenses. This program incorporates the latest state-of-the-art training in aircraft electronics/electrical systems, composite structure repairs, and PT-6 and other turbine engines.

- **GAT** — If you are an experienced aircraft mechanic, (FAR Part 65) you may qualify for our self-paced, competency-based General Aviation Technology (GAT) course. You can enroll in GAT in day, evening, or correspondence classes, and you are allowed up to 3 quarters (9 months) to complete them. But with motivation and experience you can shorten this time significantly.

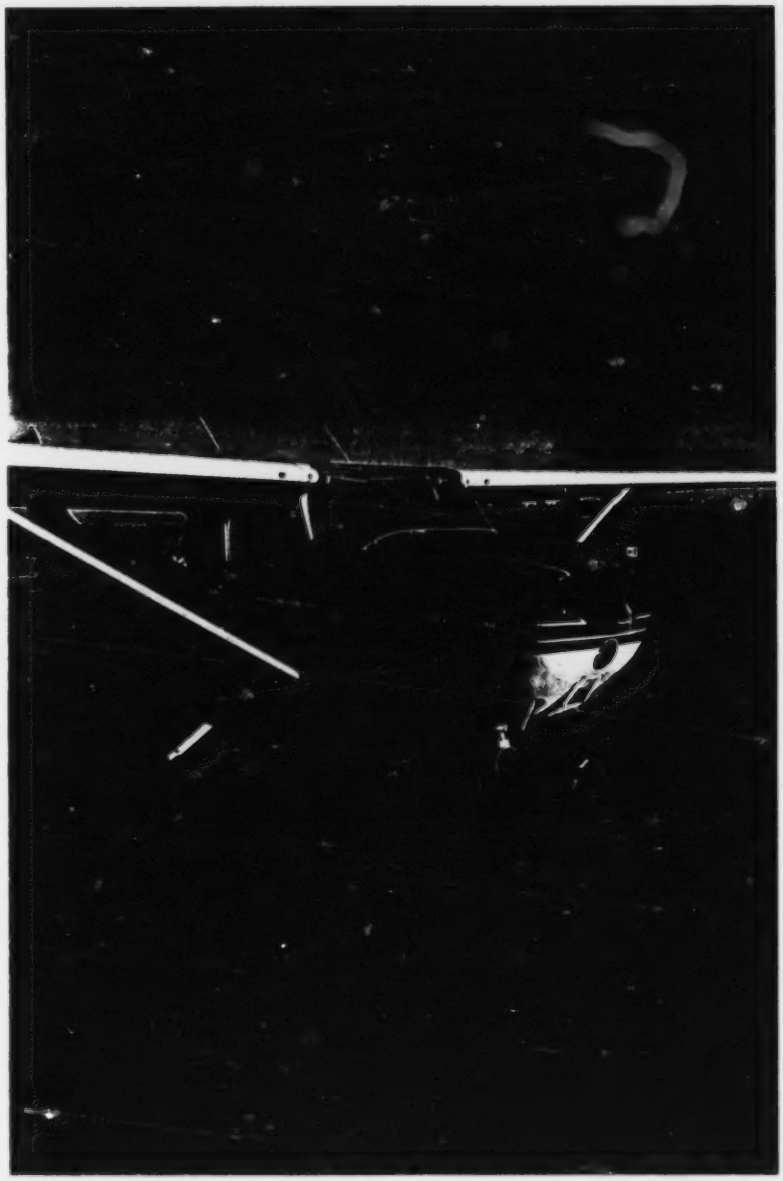
- **AVIONICS** — In the 6-quarter (18 month) Avionics Technology program, you will learn to install and repair aircraft electronics systems. Classroom study and hands-on laboratory experiences will prepare you for a job as an entry level technician in the expanding avionics industry and in other high-tech occupations as well.

"AATC provides in-depth instruction to enable the serious student to grasp avionics."

Ray Mowery — Avionics Student

"Through expert teaching and modern equipment, I obtained my FCC license in less than four quarters."

Stanley Danner — Avionics Student



BEST COPY AVAILABLE

"We're the Wings of Man . . ."

FLIGHT TECHNOLOGY — In only 18 months — or less — you can earn your FAA commercial instrument ratings and an Associate in Applied Technology degree at AATC. We also offer Certified Flight Instructor (CFI) and Certified Flight Instructor Instrument (CFII), multi-engine, helicopter, and multi-engine instructor ratings. Averaging 328 "good weather" days annually, and with a low student to faculty ratio plus a fleet of 17 aircraft, you'll get in lots of flying time with us!

Located in Southeast Alabama, AATC is only 1½ hours from Florida's sugar-white Gulf beaches and 75 miles from the bustling state capital of Montgomery.

"Flight Tech offers students a degreed, self-paced, low-cost way to achieve FAA ratings and build flight time."

Ty Ashe - Flight Technology Student

". . . And Woman!"

Women comprise a growing portion of our enrollment, and we're proud of it! The field of aviation is wide open for women seeking non-traditional careers. The sky's not the limit for our students — either male or female.

Our national stature generates an annual enrollment of more than 500 students from 59 Alabama cities, 25 states and 7 countries.

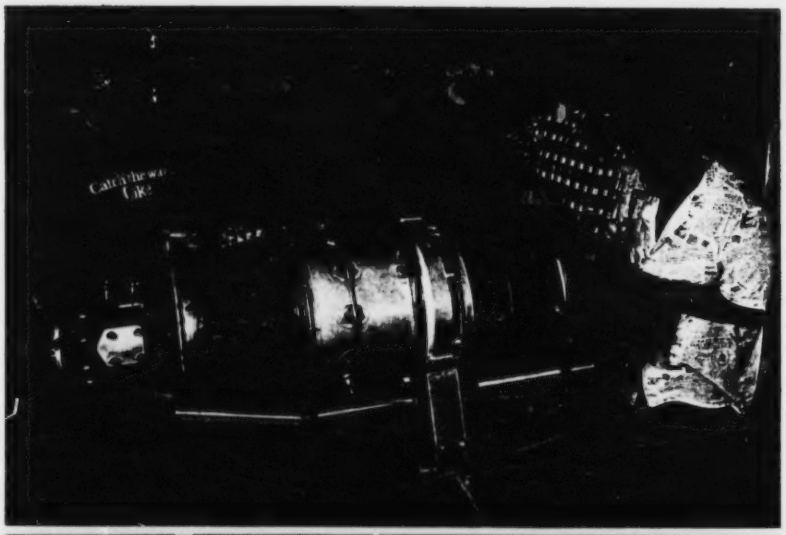
BEST COPY AVAILABLE

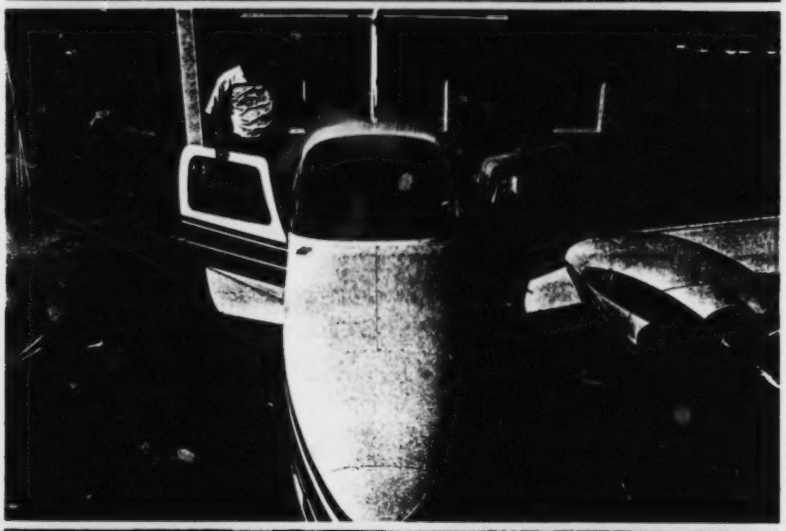
"We're Low Tuition . . . . . High Technology . . ."

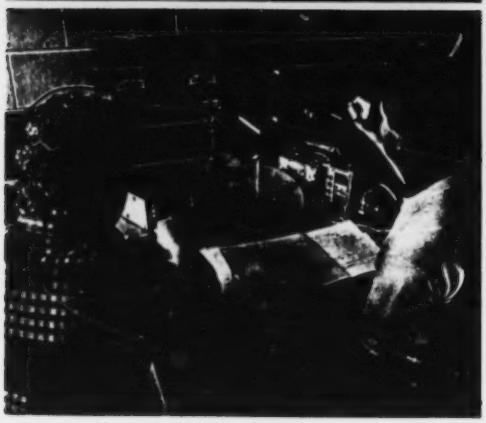
With tuition of only $200 per quarter for in-state residents and $350 for non-residents,* our rates are among the nation's lowest. Emphasis on PT-6 engine repair and system rigging have earned AATC national recognition as a top state-supported aviation college.

Moreover, flight students have access to 14 fixed-wing aircraft on our campus.

Our state-of-the-art radar and communications equipment provide excellent training for future aviation technicians.







*Tuition subject to change without notice.

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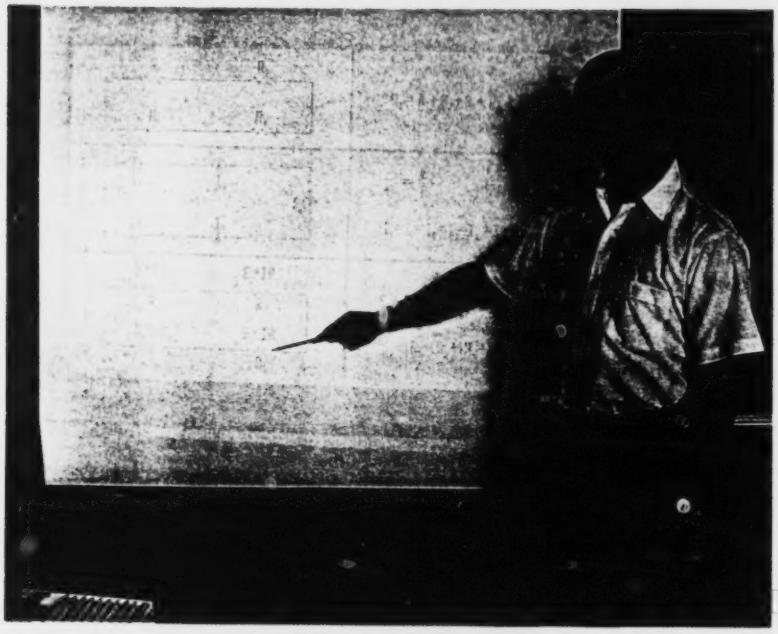
"We're Competent . . ." Faculty

We all agree that the personal touch is necessary to make AATC stand out as an educational institution.

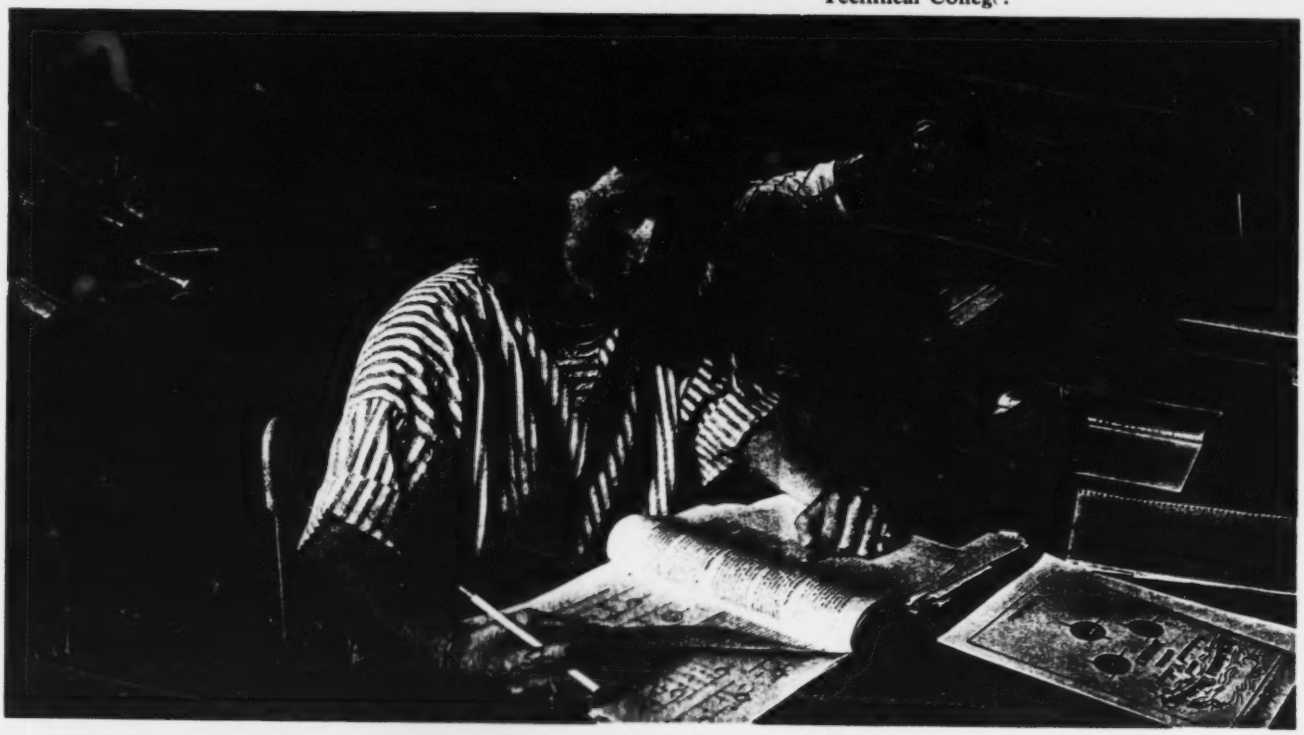


Another thing on which we agree is the need for excellence in teaching. In a national survey the following were cited by students as characteristics of quality teachers.

- **Knowledgeable about subject**
- **Well organized**
- **Concerned about and responsive to student needs**
- **Enthusiastic about subject**
- **Friendly and personable**

"I knew AATC would be the school for me . . . people at AATC really care."
Nancy Calhoun — AMT Student

Alabama Aviation and Technical College has been recruiting instructors based on similar criteria for almost thirty years, and together they have more than 300 years of experience in aviation technology! No wonder students consitently put our faculty at the top of the list of things they like most about Alabama Aviation and Technical College.



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"We're Caring . . ." Staff

At AATC we know that you have other concerns too. If you need counseling, extra tutoring in math or English, or help in finding a part-time job or a place to live, come see the staff in Student Development. We've got you covered for these extras — and our assistance is free!

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"We're Accredited . . ."

ATC is accredited by the Southern Association of Colleges and Schools, certified by the FAA, and approved for veterans' training.

"We're Affordable . . ."

You'd be surprised at how many students qualify for financial assistance — **approximately 80 percent of our students receive financial help through scholarships, grants or loans.** And contrary to popular belief, you don't have to be down to your last dollar to qualify. Remember, the earlier you apply, the better your chances. The financial aid office should be one of your first stops. After all, you won't know if you're eligible until you apply. Listed below are some of your sources of financial aid.

COLLEGE ADMINISTERED PROGRAMS

Program	Based on . . .	Award Ranges
Presidential Scholarships	Academic Achievement*	Tuition only
Pell Grant	Financial Need	$200 - $2,200
Supplemental Educational Opportunity Grant (SEOG)	Financial Need	$200 - $4,000
College Work Study (CWSP)	Financial Need	Variable

EXTERNAL PROGRAMS

Program	Based on . . .	Award Ranges
Stafford Loan (GSL)	Financial Need	$2,625 Max.
Parent Loan to Undergraduate Student (PLUS)	Financial Need	$4,000 Max.
Supplemental Loan for Students (SLS)	Financial Need	$4,000 Max.

*Alabama high-school graduates only.

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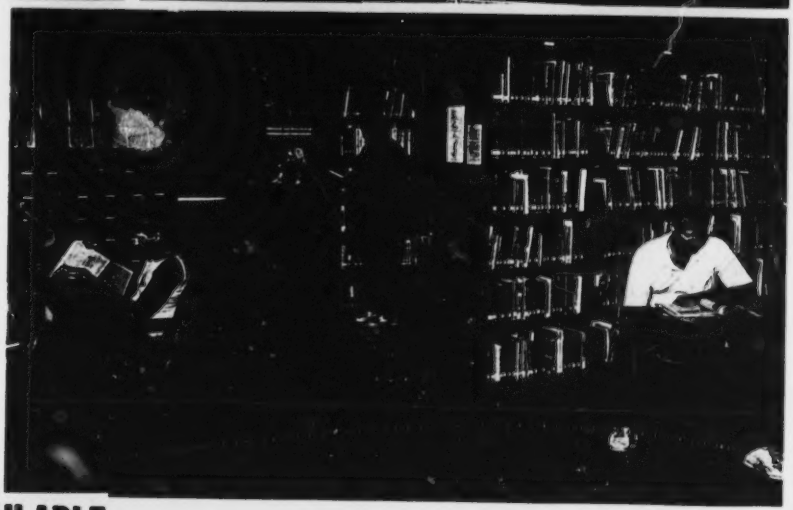
"We're Available . . ."



- with hands-on, practical training
- with classes in Communication Skills and computer literacy
- with an extensive technical library
- with on-campus meals for breakfast and lunch**
- with career planning and job placement
- with financial assistance

** at your own expense

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"We're Your Aviation College from the Ground Up!"

Employed in aviation careers with such companies as Delta Airlines, Sikorsky, Lockheed, Federal Express, and Petroleum Helicopter, our graduates have the "right stuff" to work as aviation technicians with top companies.

In fact, our graduates have become so successful, we've created an Alumni Hall of Honor to celebrate this special achievement.

Even when you graduate with state-of-the-art training our commitment remains. We assist you with job placement, and, with your help, we monitor your progress to assure your success.

Whether you're preparing for your first career or your third, we're with you from day-one, but our focus is always on your success in your future career.

"Before I entered airframe and powerplant training, I didn't know a wrench from a screwdriver. I will say without hesitation that my A & P was the most valuable license I earned to prepare me for training as a flight officer."

Shirley Shannon
AATC Graduate, Airline Pilot

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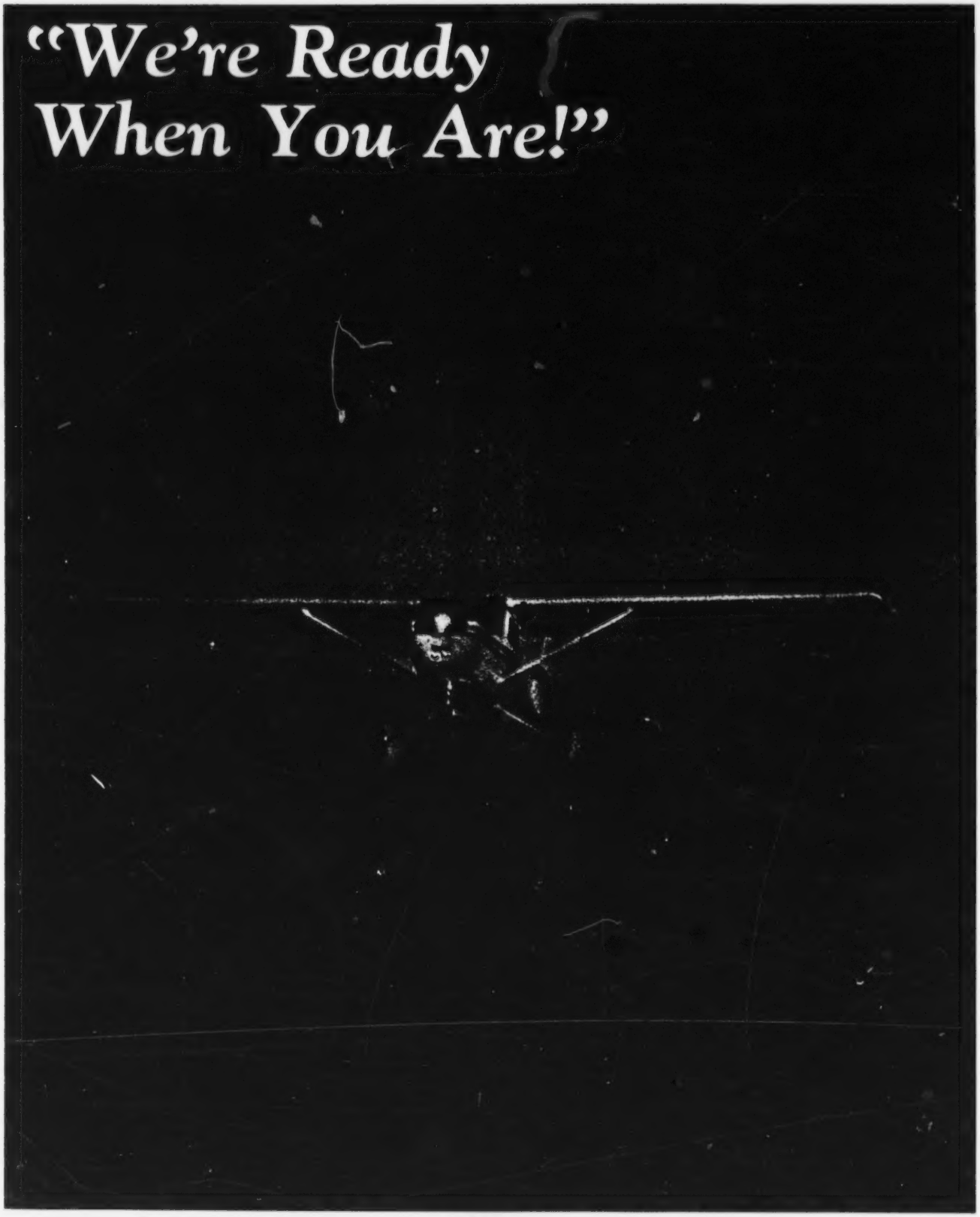
"We're Ready When You Are!"



Write or Call:

Alabama Aviation and Technical College
P. O. Box 1209
Ozark, Alabama 36361
1-800-624-3468

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WOMEN IN AVIATION AND SPACE

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FOREWORD TO PARENTS AND EDUCATORS

Despite the tremendous contributions made by women in the development of aviation and space technology, a nationwide study (Eiff, Rodriguez, Eiff, and Milton, 1986) found that women continue to be underrepresented in aviation and aerospace careers. Further, the study pointed out that the low number of females currently in the aerospace/aviation work force can be attributed, in part, to the relatively low female enrollment in educational programs that prepare students for a variety of careers in aviation and aerospace.

Why aren't women electing to train for careers in the aviation and space industry? The answers to this question are very much the same as those for other nontraditional careers, and they are:

(1) Cultural and psychological barriers to nontraditional work are imposed on women, not only by society, but also by women themselves.
(2) Women have not received the necessary information and training they need to prepare for nontraditional careers.
(3) Nontraditional role models are few in number and are not readily accessible to girls and women.
(4) The lack of support from family and peers negatively affects nontraditional career options for women.
(5) Sex-role stereotyping in all types of media precludes an environment which supports nontraditional career choices and role models.

How do we as parents and educators help women and girls overcome the persistent barriers to nontraditional career opportunities? We *can* and *must* work together to reverse sex-role stereotyping. To accomplish this goal we need to target specific objectives. The purpose of this publication is to reverse sex-role stereotyping in the field of aviation/aerospace with three specific objectives in mind. Those objectives are:

To provide women and girls with role models in a variety of aviation/aerospace career fields.

You and your students will see and read about women who are presently working in aviation/aerospace career fields.

To provide parents, educators, and students with a brief historical perspective of the roles women have played in aviation history.

Although by no means an exhaustive overview of women in aviation history, you will read about women who were stunt flyers, military pilots, and record-setters from the early 1900's to the present.

To provide additional sources of information for women and girls who are interested in pursuing aviation and aerospace careers.

There is not enough space in this publication to list all the colleges and universities that offer aviation/aerospace educational programs. However, the sources cited at the end of this publication will provide you with a variety of information about specific programs available. Moreover, counselors and educators will find resources that will assist them with sex-equity, as well as nontraditional career issues.

I sincerely hope that after reading *Women in Aviation and Space*, more women and girls will begin to realize their potential for making a contribution to one of the fastest growing technologies in the world—aviation and space technology.

All opinions and philosophies expressed in this publication are those of the author and the women who are featured in aviation careers.

Sandra H. Flowers, Ed.D.
Director of Institutional Development
Alabama Aviation and Technical College

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Anne Lindbergh

COMMERCIAL AVIATION

Stephanie Wallach, who worked as a film editor in New York City in 1971, thought flying airplanes might be an "interesting hobby." But it didn't take long after her first lesson to decide that sitting behind the control panels of an aircraft could be more than a weekend avocation—it could be an extremely exciting and challenging new career.

Following her instructor's lead, Stephanie began working full-time to obtain her pilot and flight engineer ratings, and by the mid-70's she made her way into the ranks of the professional pilots. She first began as an instructor and charter pilot and eventually landed a job with Braniff International Airways in Dallas. Today, Stephanie is a first officer for Alaska Airlines based in Seattle, Washington.

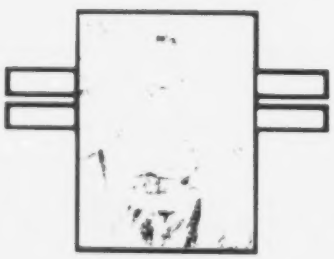
"I fell in love with flying very quickly, but I was hesitant, almost embarrassed, to express this to anyone for fear of being ridiculed. At that time there were few opportunities for women."

Stephanie Wallach

"I enjoy being a pilot," she states. "I believe that I was among the first ten women hired as airline pilots in the United States, and I may have been the first to fly right seat on the Boeing 727. One of my greatest achievements was co-founding an organization for women pilots called ISA + 21."

Stephanie has worked with numerous male pilots over the years. She has learned that old attitudes about women in nontraditional fields are slow to die.

"Sometimes there is friction from the junior pilots when a female is promoted," relates Stephanie. "Some have trouble dealing with a woman as a supervisor. I've also heard through the grapevine that some male pilots think women can't cope under stress. My experience, however, is just the opposite. Women have been working as commercial pilots for more than ten years in this country, and, as far as I know, they deal very effectively with the stresses of the job."



Hilda Hewlett

Hilda Hewlett, the first English woman to be licensed, raced against men as early as 1910.

Stephanie Wallach turns an interesting hobby into an exciting career.

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TION AND SPACE
FROM COAST TO COAST

Lynn Rippelmeyer learned early in life that not all of society's rules make sense or should be followed blindly. As a result of this discovery, Lynn is a pilot for Continental Airlines, a position that did not come automatically or easily to this ambitious and determined aviation professional.

A former flight attendant for TWA, Lynn, a petite brunette in her mid-thirties, realized that as much as she enjoyed her job as an attendant, she wanted more in an aviation career than serving meals and drinks to airline passengers—she wanted to fly the planes herself.

Lynn Ripplemeyer moves from flight attendant to Boeing 727 captain.

"I had to find out for myself what a woman could handle. The answer was—anything a man could."

Lynn Rippelmeyer

"My flight attendant position gave me my first taste of aviation," Lynn says. "I was introduced to pilots and learned what their lives demanded and made possible. The rule that only men could fly made less and less sense, and I began to see no reason why I couldn't fly as an occupation."

For five years Lynn worked six months of each year as a flight attendant and the other six taking flying lessons. In 1981 with two years experience as a flight engineer and first officer behind her—including becoming the first woman to ever fly a large-body Boeing 747—Lynn moved from Seaboard World Airlines to People Express. She rapidly advanced from first officer to captain.

"My chief pilot at Seaboard thought that having a female as a 747 pilot was terrific and helped me become the world's first," Lynn says. "When I wasn't sure I could handle a heavy jet with two engines out on one side, he made sure I was ready."

Katherine Stinson

Katherine Stinson, the first woman to fly the mail, later pioneered "skywriting." She achieved fame during a 1916 exhibition tour of Japan and China.

COMMERCIAL AVIATION

Cheryl Stearns spends as much time in the air as on the ground. A commercial airline pilot, as well as a world record champion skydiver, this aviation professional knows no boundaries when it comes to being a woman in a "man's world."

Cheryl began her venture into skydiving in Scottsdale, Arizona, in the mid seventies. She knew from the start that it was "love at first jump."

"As a challenge, I decided to make a parachute jump," Cheryl recalls of her first skydiving experience. "From the very beginning I was so overwhelmed that I wanted to continue and to excel. That's when I started pilot training."

When Cheryl joined the U.S. Army, she brought with her a pilot certificate, skydiving experience, and two years of college. In the Army she became the first female member of the Golden Knights, the Army's elite parachute team.

Cheryl has earned more than two dozen national and international skydiving championships. She also holds a world record for style and accuracy. One impressive feat involved jumping from an airplane at 2,500 feet and landing dead center on a four-inch disk—not just once but an incredible 43 consecutive times.

Cheryl, who earned a master's degree in aeronautical science while in the Army, now makes her living as a first officer for Piedmont Airlines out of Charlotte, North Carolina.

"From the time I started my aviation training until I started flying for an airline, it was a constant struggle. I had to do without life's usual pleasures, and finances were always a problem. Fortunately, all along the way I was given a helping hand and encouragement, otherwise I might never have reached my goals."

Cheryl Stearns

Photo by Wren Withers

Cheryl Sterns, pilot/skydiver, knows no boundaries.

Ruth Law

Ruth Law, in 1916 set a non-stop distance record for both men and women by performing 16 consecutive loops.

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ION AND SPACE
FROM COAST TO COAST

Sandra Szigeti used a college degree, perseverance, and a willingness to take risks as the keys to becoming a command pilot of Flying Tigers, an international air carrier that transports both airfreight and people to Europe and Asia.

Sandra's interest in aviation first began while she was still in her teens. Later, as she completed the second year of a nursing program at the University of California Medical Center, she attended a pep rally where skydivers parachuted onto the roof of a college building. One of the skydivers agreed to teach her to skydive!

"Much of my time and energy during those years was spent with my new-found skydiving friends. I am also thankful that I graduated, for it was that college degree that was essential years later when I applied for my first airline job," says Sandra.

"In retrospect, I think perseverance toward my goal was very important. I also think that risk-taking moved me closer to my goal."

Sandra Szigeti

After completing her college degree she began a career as a flight nurse, but decided that her real interest was becoming a pilot. She worked hard to earn the commercial ratings that eventually helped her obtain a job with the Flying Tigers.

"As a captain, I am ultimately responsible for the safe completion of a flight," Sandra explains. "I find that the most rewarding aspects of my job are working with the other crew members, gathering input from each of them, and then making my final decisions based on what I have gathered."

Sandra Szigeti, Captain/Flying Tigers, flies international airways.

Racing competition against men, machines (even automobiles), and fellow women pilots offered women a popular forum.

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WOMEN IN AVIA
AGRICULTURAL AND

Bonnie Wilkens thoroughly enjoys getting up in the early hours to prepare her helicopter for a day of spraying. What is it like to work as an agricultural pilot?

"You can do some very exciting things with a helicopter," she says. "When I spray the crops, I fly the aircraft at very low altitudes. Precision in height, speed and swath width is vital to ensure that the entire area receives the desired amount of material." She adds, "I love the turns that one can do in agricultural flying."

One of the most exciting aspects of Bonnie's job is controlled burning which, she says, "is great fun if you have been properly trained to do it." Usually in the early morning hours, she flies to the area to be burned and checks wind conditions. Then she briefs all the ground support personnel on how she will handle the aircraft. "It could become a disaster if not handled properly, so I spend a lot of time with the bulldozer operators, the patrolmen, and the other individuals on the ground."

How did Bonnie become interested in and prepare for this unusual career? While studying for her degree in zoology in South Wales, Bonnie was selected as one of twenty people to attend the Cranfield Institute of Technology in England where she eventually obtained a master's degree in bio-aeronautics. Her first experience as an agricultural pilot in the field was with AgRotors, Inc. in Pennsylvania.

Now an agricultural pilot for Helicopter Applications of Myersville, Maryland, the 27-year-old from Devon, England is licensed in both rotary wing (helicopters) and fixed wing (airplanes). A member of "Whirly-Girls"—the international organization of women helicopter pilots—Bonnie encourages women to consider a career in agricultural aviation. "It is a very worthwhile occupation," Bonnie emphasizes.

"Agricultural aviation is a very worthwhile occupation. All types of pests, whether insects, diseases, plants or fungi, are competing more and more for the same food sources upon which the human race depends."

Bonnie Wilkens

Amelia Earhart

In 1932 Amelia Earhart became the first woman to fly solo across the Atlantic

Bonnie Wilkens joins a special breed of pilots.

TION AND SPACE
ORPORATE AVIATION

Susan Anderson, corporate pilot, has become so accustomed to the frequently asked question, "Are you a stewardess?" that she merely smiles matter-of-factly and responds, "No, I'm the pilot," and quietly enjoys the surprised reactions.

After eleven years as a professional pilot, plus several years as an in-flight nurse, Susan has learned that women in aviation have had to face certain biases not experienced by men. But a love of flying and dedication to her profession has overshadowed any concerns about discrimination.

Corporate piloting, Susan has discovered, is an interesting and rewarding career that provides her with ample opportunities to travel both in and out of the United States. Susan is one of two pilots who flies AIRCOA corporate executives to the company's various hotel locations.

Understanding that in corporate piloting jobs can come and go depending on the overall economy of the industry, Susan is prepared, if necessary, to return to another type of aviation job she once held—flight nursing.

"Flight nursing is an intense and exciting job for a nurse."

Susan Anderson

Most of the patients a flight nurse encounters are critically ill or traumatized. Sometimes the patient needs heart or other organ transplants. Consequently, they usually need individual attention by a highly trained and capable nurse who can readily accept responsibility for the patient in an emergency situation.

Most of the patients are usually stable enough to travel for the time it takes to get them to a different hospital," she says. "Of course, a few patients, even on short flights, will take a turn for the worse. In a few instances, I have been very relieved to get them to their destinations. Fortunately, air traffic control centers have the authority to clear airport runways for an immediate landing of a plane carrying a seriously ill patient," she adds.

Susan has noted the changes in the profession since her flight nursing days in the late 70's. Now, in increasing numbers states are beginning to monitor and regulate flight nursing practices and qualifications, and the Federal Aviation Administration is becoming more involved as well.

Susan Anderson moves from flight nurse to corporate pilot.

The "First All-Woman Flying Meeting" was held largely to show the male flying establishment the competence of women in the air.

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WOMEN IN AVIA
AVIATION MANAGEMENT

Mary Rose Loney is in a high-powered administrative position that places her in charge of 200 employees—most of whom are male—at a major west coast international airport.

How did this happen? "Actually, I just fell into it," replies the 36-year-old assistant director of aviation for the San Jose, California airport. "Following completion of my undergraduate studies in the early '70's, I was on a hike in the Grand Canyon and heard about an entry-level clerk job with Grand Canyon Airlines. I landed the position and entered the field of aviation. Three years later, I relocated to Las Vegas and moved from the airline side to airports."

Since that first venture into aviation management, Mary Rose has served in management positions at airports in Las Vegas, Nevada, and Albuquerque, New Mexico.

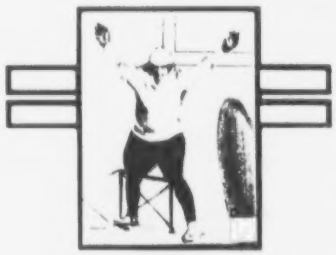
In 1984 she became the third woman in the United States to earn the status of Accredited Airport Executive (A.A.E.). Mary Rose has learned from experience that it's not easy being a female—and a relatively young one at that—in a nontraditional career field.

"Once I decided that an airport career was for me, I worked hard to attain my goals. If anything has been viewed as a hindrance in supervising others, it's my age even more than my sex."

"While we're starting to see more women getting into executive levels of airport management, we still have some biases to overcome. Generally speaking women have to be twice as good in their jobs as men."

Mary Rose Loney, A.A.E.

A typical day for Mary Rose involves a variety of duties and responsibilities necessary to airport operations. She might, for instance, meet with the chief of airport police to discuss security enhancements at the airport. Or, she might meet with an airline station manager to discuss facility changes. Because one of her jobs is to insure the comfort and well-being of all airport passengers in the terminal, she walks through the airport terminal daily to ensure that everything is operating smoothly.



Lilian Boyer

Lilian Boyer barnstormed the country with elaborate stunt exhibitions.

Mary Rose Loney, A.A.E., works as assistant director of aviation at the San Jose, California airport.

ION AND SPACE
LOCAL AND STATEWIDE

Anne Beaurivage is one of the few women who has managed to land a prestigious, highly visible job where they report directly to the governor of a state who also happens to be a woman. Anne Beaurivage, however, is one of those fortunate few. Anne's position is Director of Aeronautics for the State of Nebraska, and, as such, she reports to Governor Kay Orr.

Anne is responsible for the state aeronautics organization that is comprised of four divisions and thirty-five employees. She oversees federal and state airport grants, operation and maintenance of three airfields, navigational aids, air transportation for the governor and other state officials, licensing and inspection of airports, certification of aerial applicators (crop dusters), aerospace education, and departmental business and administration.

"I really like my job. I have a great deal of freedom to implement policies, and I enjoy the management side as well. As a manager I try to use common sense, get along with different kinds of people, and inspire them to do their best."

Anne Beaurivage

With five division deputies reporting to her, daily regular contact with other department personnel, and occasional liaison work with federal and state legislators, Anne's "people skills" are regularly and finely honed.

Anne achieved her current position by leaving her private law practice almost twelve years ago to become a professional pilot and flight instructor. From there she became interested in aircraft sales, eventually networked her way into the legislative circles of Washington, D.C., and then worked as a legislative assistant.

"There is a lot of diversity in aviation careers that should interest young women today," Anne observes. "Unfortunately, the aviation field is not well publicized in high schools. Students hear about pilots and astronauts, but they don't hear about technical jobs like engineering and avionics. If young women have the interest, aviation careers are available to them."

Anne Beaurivage demonstrates a winning combination of talent and skill.

Louise Thaden

In 1936 racer Louise Thaden became the first woman to join the prestigious transcontinental Bendix Air Force.

WOMEN IN AVIA
AVIATION MAINTEN

Linda Williamson will testify to the fact that women can and do work as aircraft mechanics and aircraft mechanic supervisors! The first inkling of what it was like to be a helicopter mechanic occurred when Linda Williamson participated in Army Reserve training. "We actually went out into the field where we set up tents and lived without the conveniences of home," Linda recalls. "Normally, most maintenance work is done in a hangar; however, we learned to repair all kinds of helicopters in the open and in all kinds of weather. I learned first-hand about clinking around a helicopter, working with tools, and even at times getting dirty."

"It is important to get experience and do a good job, especially if you are a woman who will be closely scrutinized by male co-workers. Some days it is very hectic, but almost everyone is supportive of me as a supervisor."

Linda Williamson

Linda's background in the Army Reserve as a mechanic, coupled with the Airframe and Powerplant license that she earned at Alabama Aviation and Technical College in Ozark, Alabama, was influential in helping her obtain her current position as an aircraft maintenance supervisor with a major helicopter maintenance contractor at Fort Rucker, Alabama. Linda says the management is generally pleased with female employees who now comprise about 10% of the company's 2,000 plus workforce.

Gladys O'Donnell

Gladys O'Donnell, winner of many competitive flying events, is shown with the Earhart trophy she won in the National Air Races of 1937.

Linda Williamson rises in ranks from aircraft mechanic to maintenance supervisor.

TION AND SPACE
ANCE TECHNOLOGY

Dee Bulling is the shortest and smallest individual working in her department. But that is to be expected when one understands she is the only woman working in an avionics benchroom with eighty men.

"The male workers treat me great—like one of the guys. They treat me as an equal and don't look down on me because I'm a woman. They will offer to help if I really need it, but there's very little physically I can't do on my own."

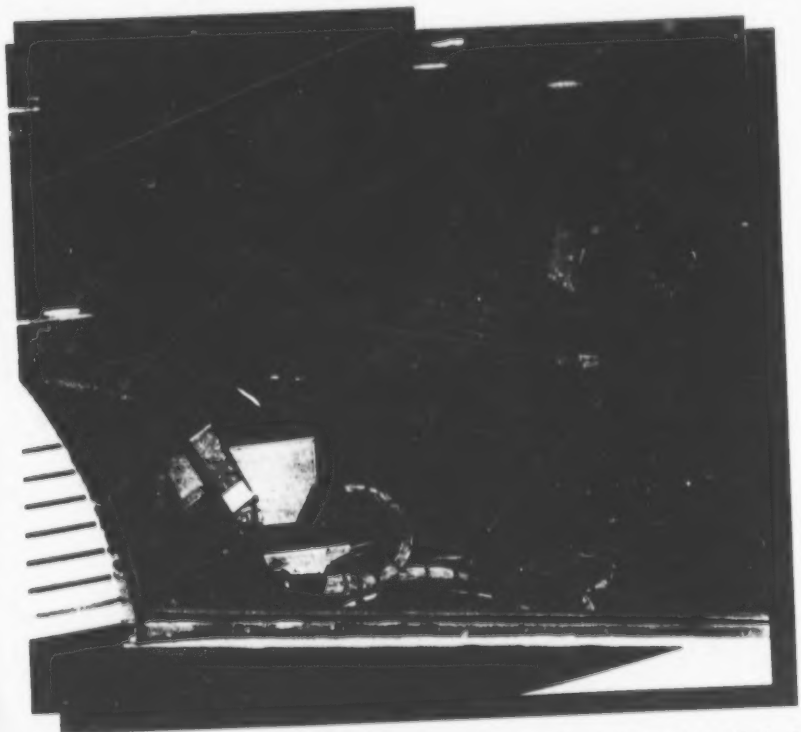
Dee Bulling

Five days a week, eight hours a day, Dee joins thirty of these men to work the day shift at Duncan Aviation in Lincoln, Nebraska, troubleshooting, repairing, and bench testing autopilot computers and flight directors used on various aircraft.

Dee emphasizes that she is paid a wage comparable to those paid men with the same abilities as her own. "There's no pay discrimination," she states. "I feel I'm being paid what I should be. Others may make more, but they have more knowledge. I think this field is an excellent one for a woman."

Young women considering a career in avionics, also known as aircraft electronics, should possess a fair amount of manual dexterity, Dee suggests. They should also be personable and knowledgeable in the area of communication skills. "I would also tell young women that they should not be intimidated by working with men," she cautions. "If a woman takes the attitude that she can do the job and do it well, then she will succeed."

Dee began working at Duncan Aviation nearly ten years ago as an electronic assembler. Immediately "falling in love" with the aviation industry, she earned a diploma in electronics at a nearby community college. Soon she will receive an associate's degree in the same field of study. Additionally, and because of a personal interest in flying, she has completed ground school for her private pilot's license.



Dee Bulling troubleshoots, bench tests, repairs, and maintains aircraft electronics systems.

Amy Johnson

Amy Johnson, an Englishwoman, made many record-breaking flights in the early 30's and in 1930 became the first woman to fly solo from England to Australia.

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Barbara Garwood, eleven-year veteran pilot of the U.S. Air Force, discovered in 1975 when she first entered military service that women were neither allowed to fly aircraft nor attend the Air Force Academy.

But all that changed just a year later in 1976 when the all-male "fraternity" of pilots allowed women to train. Seizing that opportunity, Barbara, a public affairs officer with degrees in English and counseling, applied to the Air Force's "test program" for women pilots.

"The competition was fierce," Barbara remembers. "At that time the Air Force accepted only ten women a year into pilot training as opposed to 2,000 men. In my opinion it was also rather political. Nevertheless, for several years I kept applying and in 1979 my dream was fulfilled because another female officer had turned down the chance to enter pilot training. As the officer's alternate, Barbara was soon assigned to UPT (Undergraduate Pilot Training) at Williams Air Force Base, Arizona.

Nancy Love

Nancy Love organized an American unit called the Women's Auxiliary Ferrying Squadron.

Barbara's UPT class consisted of sixty-three men and four women. Training for the women was exactly the same as for the men. After graduation, she earned the distinction of becoming the Air Force's third female T-38 supersonic jet instructor pilot.

"There were, unfortunately, no people in my life who helped direct me in this career path. Mostly it was one obstacle after another and ignoring all the 'You can't do thats.'"

Barbara Garwood

Believing strongly that the restriction of women to non-combat aircraft was wrong, Barbara and her friend Captain Karen Daneu formed a support organization called the Women Military Pilots Association (WMPA).

It took three years of hard work and extensive letter-writing to get WMPA off the ground. Barbara, as the group's first president, believed women needed an organization to promote their concerns such as increasing the types of aircraft women could fly. Today, she is pleased to note that WMPA boasts a membership of 300 active duty female pilots as well as 350 WASP members who had served in World War II.

By the mid 80's, an Air Force Academy instructor, wife of a fellow Air Force officer, and a mother, Barbara separated from the Air Force primarily to be with her family.

Currently active as an aircraft maintenance officer in the Reserves and soon to be flying KC-135 refueling and cargo planes, Barbara is also employed by American Airlines as a flight engineer based in Chicago.

Barbara Garwood made a difference in the Armed Forces.

Diane Hofer, unlike most civil engineers who design roads and bridges, designs airports. She is a civil engineer for the Nebraska Department of Aeronautics. One of three department engineers, Diane began working in her present position seven years ago during her senior year at the University of Nebraska.

How does one design an airport? According to Diane, the job involves surveying the natural terrain, developing plans, and making sure those plans adhere to Federal Aviation Administration guidelines. Specifically, her job is to oversee airport construction projects and to act as liaison between the FAA, airport sponsors, and companies contracted to do the actual jobs.

Diane reports having few, if any difficulties, working as a woman in a nontraditional field. "I really don't have any unusual problems," she states. "A few people don't understand why a woman would be in this field, but, basically, I don't have any complaints. I do work mostly with men, but they treat me well. I just try to present myself well and do what the job calls for."

Diane encourages young women with an interest and aptitude in math and science to pursue the field of engineering if that is what they want to do. "I have always had an interest in math and science, but I didn't know as a girl that I wasn't supposed to have that interest," Diane recalls. She does, however, acknowledge that airport design is a limited field because of the relatively few airports in the United States.

"One thing about my job that surprised me was that I don't just sit at a design board. I meet many more people than I originally thought I would, and I also do a considerable amount of writing. I write a lot of letters, environmental statements, and specifications. Communication skills are very important."

Diane Hofer

Diane Hofer designs airports.

During World War II, women pilots performed invaluable service for their countries.

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Barbara McConnell Barrett served from April 1, 1988 to January 20, 1989 as the ninth Deputy Administrator of the Federal Aviation Administration and the first woman in that high an agency post.

Native to Pennsylvania and a longtime resident of Arizona, Barrett is no stranger to Washington. A worker for Senator Barry Goldwater (R-Arizona) and the Reagan-Bush ticket in 1980, she was offered a post with the Civil Aeronautics Board in 1982, beginning as an executive assistant to the chairman, then becoming a member and finally the vice-chairman until the board's demise in December 1984.

Barrett was not a Johnny-come-lately to aviation, although she's only now a student pilot. "I might say my interest was sparked when my father took my older brother and me—at the age of six—to a grass strip in New Alexandria, Pa., for a once-around-the-patch flight." As she grew up, she developed an admiration for pilot-senator Goldwater. With Barrett subsequently having the opportunity to work with and near him, her appetite was "further fed by his affection for flying."

"I hope to help more those projects that will advance the airport capacity program and the National Airspace System Plan. In addition, I would like to see the FAA get more credit for its accomplishments, such as the Host Computer implementation."
Barbara McConnell Barrett

After graduation from college, she worked as an intern for the Arizona House and Senate Transportation Committees, during which time she worked in separating the highway and aeronautical divisions within the Transportation Department.

In the nine months remaining in the Reagan Administration following her arrival at FAA, she was not intent on reinventing the wheel. "What I can do," Barrett says, "is ask what are the high-priority items, then target and spotlight and assist.

"Long before coming here, it was clear to me that deregulation was going to result in a lot more people traveling who could do so only if airside and groundside capacity exists. Through ATC modernization, advanced automation systems and other activities, we're going to have an increasing amount of airside capacity. But airport capacity is the real bottleneck. The Administrator and I share an interest in this and other projects."

Photo by Federal Aviation Administration

Barbara McConnell Barrett assumes position as Deputy Administrator, Federal Aviation Administration.

Anne Lindbergh

Anne Lindbergh's service as navigator, co-pilot, radio operator and photographer was essential in most of her husband's historic surveying/chartering flights of the early 1930's.

ION AND SPACE
DERAL AGENCIES

Mae Jemison's name, like those of aerospace colleagues Sally Ride and Judith Resnick, will be recorded in the annals of space history as a "first." Mae, a former medical doctor who also possesses a degree in chemical engineering, is the National Aeronautics and Space Administration's (NASA's) first black female astronaut candidate.

Mae is immersed in a varied, comprehensive, and intensive training program with NASA. She is studying such subjects as orbiter systems, meteorology, gravitation, and space science. In addition, she's learning about earth geography, geology, oceanography, electrical systems, and how airplanes fly.

How does she feel about this honor? "It's a difficult question to answer," Mae says. "When I applied I was not thinking about becoming the first black or minority woman in space. I applied because the idea of being an astronaut is something that has always captured my imagination. I do acknowledge that it is important for all members of society to be represented in this program, black women as well as others. But as a role model, my most important mission is to be the best astronaut I can be."

"It's important for the United States to go ahead with space exploration," Mae states. "One of the things we need is a permanent space station that will enable people to remain in space three months to a year at a time. A lot of technology advancements would result from this project and it would benefit many people. But whether a space station becomes a reality depends on Congress and the American public."

"The most important thing is to choose a career that you really want. A space career for me is the fulfillment of a childhood desire. It's an adventure, a frontier, and gives me an exciting opportunity to help humankind expand horizons outside this planet and gain entry to the universe."

Mae Jemison

Photo by NASA

Dr. Mae C. Jemison fulfills childhood desire to have a career in space.

Anyone interested in a space career, Mae advises, should possess a good understanding of math and the sciences and a broad based education that encompasses communication skills. A bachelor's degree in one of the hard sciences—physics, math, or engineering—is essential.

Willa Brown (Chappell)

1906 — Pilot, flight instructor, teacher, writer, advisor to FAA on "Women in Aviation." Co-owner and operator of Coffey School of Aeronautics, Oak Lawn, Il., pioneer of Women Flyers of America; co-founder and Secretary-Treasurer Emeritus of National Airmen's Association of America; member of Aircraft Owners and Pilots Association, Civil Air Patrol, and National Black Writer's Club.

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WOMEN IN AVIA
AVIATION AND F

Barbara Green was in a dead-end job looking for a more exciting career. She got her wish! She is now an air traffic controller at Hartsfield International in Atlanta. Despite the fact that life can be somewhat stressful controlling busy airspace at a high density traffic tower, Barbara feels that her career choice has given her the versatility and sense of accomplishment that she was looking for in a career.

"I am working in a field that requires taking responsibility for the safety of others. I can't be timid about giving the pilots instructions they need to land and take off safely," comments Barbara.

Actual emergencies, Barbara notes, are rare. However, when one does occur, the mettle of the controller is tested in ways not tested in the routine day-to-day tasks of controlling airspace around an airport. For example, when an emergency does occur, the controller must act quickly to assist the pilot. That assistance might be priority handling for landing, or it could be re-routing around weather. "Fortunately, we don't have many lost or disoriented pilots at this facility," she says.

"As an air traffic controller, I am an employee of the Federal Aviation Administration."

Barbara Green

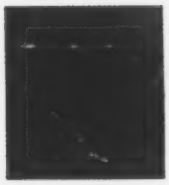
Barbara notes that individuals interested in a career as an air traffic controller must be no older than 30 and must also pass a physical exam. Although a college degree is not a requirement, the controller applicant will need a high school diploma and three years of experience. Other criteria for becoming an air traffic controller includes passing a written exam and attending a comprehensive training program in Oklahoma City, Oklahoma. Barbara also emphasizes the importance of mathematical and abstract thinking skills.

Jacqueline Cochran

Jacqueline Cochran's 1953 breaking of the sound barrier in an F-86 Sabre was the crowning achievement of an outstanding aviation career.

Barbara Green controls busy airspace as air traffic controller.

ION AND SPACE
DERAL AGENCIES



rlene Feldman feels that "Aviation is not just a profession—it's a way of life." Arlene's career in aviation began when she first learned to fly about 30 years ago. After her children were grown, Arlene pursued a career as an aviation attorney. Why aviation law? According to Arlene, aviation law offers "unique challenges." She was able to utilize her expertise as a consultant in aviation law to members of the legal profession and aviation groups.

Arlene has also been an active member of the "Ninety-Nines," an international organization of licensed women pilots, and is the first Honorary Member of the Professional Women Controllers. In June 1988, Arlene became the New England Regional Director in the Federal Aviation Administration—the first woman to become a Regional Director.

"Aviation is not just a profession—it's a way of life."

Arlene Feldman

She was promoted to the highest rank in New England from the Federal Aviation Administration (FAA) Western-Pacific regional headquarters where she had been the Deputy Director since April 1987. Prior to that, she served as Deputy Director and Acting Director of the FAA Technical Center in Atlantic City, New Jersey. She also served as New Jersey's Director of Aeronautics, the first woman ever to hold the post. In that position, she spearheaded legislation that resulted in New Jersey's Airport Safety Act of 1983, which provides aid to both publicly and privately owned airports.

Arlene advises young women who aspire to careers in aviation to obtain information from flight-related groups and organizations, such as the Civil Air Patrol, the military service academies or the Young Astronaut's program. She also recommends reading about aeronautical history to learn the first lesson for success in aviation: "Reach for the horizon and work hard to get there."

Arlene Feldman uses aviation law background as Regional Administrator, Federal Aviation Administration.

Sally Ride

Sally Ride became the first American woman in space in June 1983.

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WOMEN IN AVIA
AVIATION E

Ida Van Smith, a retired reading teacher in New York City public schools, is the founder of the Ida Van Smith Flight Clubs, Inc.—an organization that exposes youngsters to careers in aviation and space. Each club averages 20 members whose ages range from three to nineteen.

"I feel that anything children do very young, they will probably be able to learn better and feel more at ease with than if they wait until they were my age to begin."

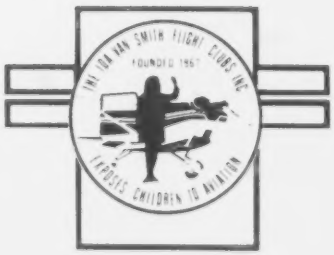
Ida Van Smith

When Ida Van Smith was a little girl of 3 or 4 years, she remembers her father constantly taking her to the small airport in their home town Lumberton, North Carolina, to watch the airplanes. Ida was fascinated by the pilots and their ability to maneuver the little planes. She believes that it was at that time that she really decided to fly when she grew up. Her father, having exposed her to aviation, planted the seed in his child's mind that some day she would master those marvelous flying machines.

The dream to fly was not to be realized until many years later. High school, college, marriage, children of her own, and a career as a teacher intervened. But the dream continued; and one day, Ida found herself at another airport in Fayetteville, North Carolina, actually taking flying instruction.

Among her many accomplishments as an aviation educator, Ida Van, (as her friends call her), produced and hosted a weekly TV program about children in aviation, taught a college course, "Introduction to Aviation," and produced a coloring book called "Fly With Me Coloring Book." The coloring books, designed to give children "a piece of aviation history," are based on her true story.

Ida's picture and story lines appear in the Smithsonian National Air and Space Museum with the Tuskegee Airmen's BLACK WINGS, the Pentagon, and the International Women's National Air and Space Museum in Dayton.



Ida Van Smith produced a coloring book designed to give children "a piece of aviation history," based on her true story.

Ida Van Smith accepts World Aerospace Educators Organization Award from Dr. C.M. Graves of NASA.

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TION AND SPACE DUCATION

Iris Harris spent nearly two decades as a public first-grade teacher in Fort Payne, Alabama. What does her teaching experience have to do with aviation? A great deal!

A few years back, while she was earning her private pilot license, Iris regularly shared her aviation experiences with her first-grade students. She noted, "Each day my students were hungry to learn more. Even below average students became more attentive in class and their grades began to improve."

Iris looked for a way to further inspire her students. Her efforts resulted in "Fantastic Flight" a unique aviation awareness program that includes a flight simulator designed especially for elementary students, study units in aviation history and types of aircraft, and an overview of aviation careers.

The "Fantastic Flight" program uses the student's natural fascination for aviation to make learning more meaningful and exciting. It infuses aviation topics into all curriculum areas—reading, math, language, arts, science, social studies, and health. Subject matter that once was dull becomes exciting and has a purpose."

Iris Harris

Furthermore, Iris incorporated the use of role models into the "Fantastic Flight" program. Classsroom visits by pilots, airport managers, air traffic controllers, aircraft mechanics, meteorologists—all add a unique dimension to the student's awareness of aviation.

Today, Iris teaches other teachers how to implement her aviation programs into their curricula. Iris, who has received many awards and commendations for her contribution to aviation education says, "Aviation education is a rewarding career. My greatest rewards are the student successes and the opportunities to help youngsters look into the future."

Iris Harris, Aerospace Education Specialist, created the "Fantastic Flight" program for elementary students.

The "Fantastic Flight" symbol represents the Aviation education program designed by Iris Harris.

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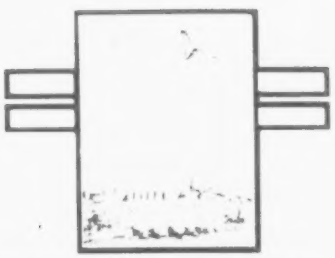
WOMEN IN AVIAT
AVIATION EDUCATION

Shirley H. Woodie, newly named president of Alabama Aviation and Technical College, feels comfortable in the pilot's seat of one of the few two-year public technical colleges in the nation whose mission focuses on aviation technical training.

Shirley is the first female president of the college, which has an average enrollment of 500 students, men and women who come from all over Alabama and the rest of the nation.

"The aviation industry abounds with opportunities for the personal and professional growth of women."
Dr. Shirley H. Woodie



Alabama Aviation and Technical College

Alabama Aviation and Technical College, founded in 1960, is a state supported two year college that provides training in aviation technology.

Upward mobility is a subject about which Shirley can speak with personal expertise. At the age of 45, she has worked her way to the top of her profession in educational leadership at a pace that can be described as supersonic. She held positions as instructor, administrative assistant and dean of development in the two-year college system before assuming the presidency of the aviation college.

Is she resting on her laurels? Or is she intimidated by the work ahead? Neither. "We're very focused on our mission here," she says, "and we are working toward strengthening the relationship between the college and the aviation businesses and industries that are most likely to employ our graduates."

Shirley is also committed to increasing opportunities for women in aviation careers by providing the resources needed to inform women of aviation education opportunities. Part of the effort to recruit women, as well as men, into the program involves the development of partnerships between the aviation college and the state's high school counselors and teachers. "We must provide counselors and teachers with the information they need to counsel students about the various career options in aviation. Only then will students have the resources they need to make postsecondary choices."

Dr. Shirley H. Woodie begins a new era at Alabama Aviation and Technical College.

TION AND SPACE
AND BUSINESS LEADERS

Sheryl Jones always wanted to fly, but grew up in a farm community where the opportunity was never available. Finally in 1976, she learned to fly. Her first flight instructor encouraged her to enter a proficiency derby. She won two of the three contests and quickly learned to love the excitement and fame associated with her flying abilities.

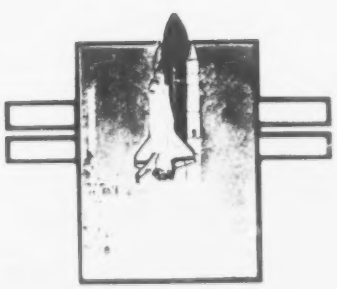
Sheryl's aviation experience helped her get a job that focuses on marketing aircraft instrumentation. In 1978, she became Regional Manager for Narco Avionics for the west coast of the United States. Then, in 1981 Bell Helicopter hired her as a Regional Marketing Manager for Bell Helicopter Textron (BHT)—the first woman BHT had put in such a major marketing position. Sheryl's marketing division has won "Division of the Year" three times out of the last seven years.

Sheryl covers the State of Florida in sales, performing all of her own demonstrations in Jetranger and Longranger helicopters.

"I am now president of The Whirly Girls and a member of The Ninety-Nines and AOPA. My job has very high visibility and allows me to be active in helping other qualified women to find a place in the helicopter industry."

Sheryl Jones

Sheryl Jones markets helicopters.



Women, in ever-increasing numbers, are becoming prolific in the air. As attitudes about flying continue to change, women are finding aviation the key to open the door of their future.

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ASSOCIATIONS/INTEREST GROUPS

Aircraft Owners And Pilots Association
421 Aviation Way
Frederick, MD 21701

Air Traffic Control Association
2020 North 14th Street, Suite 410
Arlington, VA 22201

American Association of Airport Executives
4224 King Street
Alexandria, VA 22302

American Institute of Aeronautics and Astronautics, Inc.
370 L'Enfant Promenade S.W.
Washington, D.C. 20024–2518

American Society for Engineering Education
One Dupont Circle
Washington, D.C. 20036

American Society of Aviation Writers
Six West Park Place
Great Neck, NY 11023

American Society of Civil Engineers
345 East 47th Street
New York, NY 10017

Aviation Distributors and Manufacturers Association
1900 Arch Street
Philadelphia, PA 19103

Chief of Education
National Air and Space Museum
Washington, D.C. 20560

Experimental Aircraft Association
Wittman Field
Oshkosh, WI 54903–3086

Federal Aviation Administration
Aviation Education Program,
APA–120
Washington, D.C. 20591

General Aviation Manufacturers Association
1400 K St., N.W., Suite 801
Washington, D.C. 20005

International Society of Women Airline Pilots
P.O. Box 38644
Denver, CO 80238

National Aeronautics & Space Administration
Office of Public Affairs,Code AP
Johnson Space Center
Houston, TX 77048
Attn: Agencywide Federal Women's Program Manager

NASA Headquarters
Mail Code XH
Washington, D.C. 20546

National Aeronautic Association of The U.S.A.
1400 Eye Street #550
Washington, D.C. 20005

National Association of Air Traffic Specialization
Suite 415
Wheaton Plaza North
Wheaton, MD 20902

National Association of Flight Instructors
P.O. Box 793
Dublin, OH 43017

National Association of State Aviation Officials
Suite 505
8401 Colesville Road
Silver Spring, MD 20910

National Agriculture Aviation Association
1005 E Street, SE, Suite 103
Washington, D.C. 20003

National Air Transportation Association
4226 King Street
Alexandria, VA 22302

National Black Coalition of Federal Aviation Employees
P.O. Box 521004
Tulsa, OK 74152

National Business Aircraft Association
1200 18 St. NW, 2nd Floor
Washington, D.C. 20036

National Congress on Aviation and Space Education
HQ CAP/ED
Maxwell Air Force Base, AL 36112

Ninety–Nines, Inc.
P.O. Box 59965
Will Rogers Airport
Oklahoma City, OK 73159

Professional Aviation Maintenance Association
500 Northwest Plaza, Suite 401
St. Ann, MO 63074

The Institute of Electrical and Electronics Engineers, Inc.
345 East 47th Street
New York, NY 10017

The Society of Women Engineers
United Engineering Center
345 East 47th Street, Rm.315,
New York, NY 10017

Women's Educational Equity Act Program
WEEA Publishing Center
55 Chapel Street, Suite 200
Newton, MA 02160

Women's Military Pilots Association
1520 Beck Drive
Colorado Springs, CO 80908

Whirly Girls
1619 Duke Street
Alexandria, VA 22314

University Aviation Association
P.O. Box 2321
Auburn, AL 36830

WOMEN IN AVIATION AND SPACE
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NOTES

AATC STUDENT NEWSLETTER

VOLUME 2 • NUMBER 7

OCTOBER 1990

Alabama Aviation and Technical College and Northwest Airlines Forge New Partnership

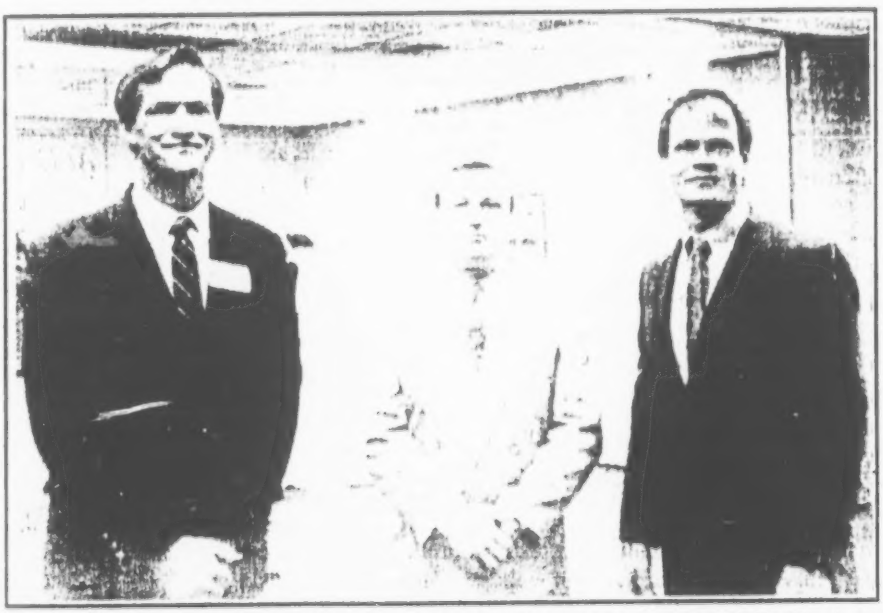
Education and aviation industry officials held a news conference at Alabama Aviation and Technical College (AATC) recently to announce a major partnership between the College and Northwest Airlines. Making the joint announcement were Mr. Steadman Shealy, Jr., member of the Alabama State Board of Education; Dr. Fred Gainous, Chancellor of the Alabama College System; Mr. Thomas E. Devine, Vice-President of maintenance and engineering-Atlanta for Northwest Airlines; and Dr. Shirley H. Woodie, President of AATC.

Making the joint announcement about the partnership were from left to right, Dr. Fred Gainous, Mr. Steadman Shealy, Jr., Mr. Thomas Devine and Dr. Shirley Woodie.

The National Science Foundation (NSF) has awarded to AATC a grant of up to $289,525 over a three-year period to assist in financing partnership activities. Northwest Airlines will contribute engineering and technical personnel resources and equipment to AATC. The value of Northwest's contribution will meet or exceed the NSF grant award, bringing the total project to approximately $600,000 over the three-year period.

AATC students will be the beneficiaries of the partnership. At least 100 AATC students each year will visit Northwest's maintenance facility in Atlanta to gain a better understanding of the real-world workplace of a major aviation industry employer. At least 40 students a year will participate in structured interviews with Northwest personnel to improve their abilities to compete for jobs when they graduate. At least 100 students each year will participate in seminars featuring successful minority and female role models from the aviation industry. All AATC students will strengthen math skills needed for successful employment in the aviation industry. New and improved math courses will be developed jointly by AATC faculty and Northwest Airlines personnel. The NSF grant will also finance the expansion of library and media resources to support mathematics instruction at AATC.

The project will be directed by Mr. Michael Rosentrater and Dr. Sandra H. Flowers of AATC working collaboratively with Mr. Steve Eberhardt, Northwest Airlines.



Student Government officers, David Grant and Shane Phelps share a moment with Mr. Steadman Shealy, Jr., member of the Alabama State Board of Education.

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Sid and Star

YOU'VE BEEN FLYING TOO LONG WHEN:
...YOU CAN LOCATE YOUR FLIGHT BAG BY SMELL.
...YOU CALL FOR THE 'BEFORE START' LIST WHEN FIXING UP THE FAMILY CAR.
...MACHINE VENDING FOOD BEGINS TO TASTE GOOD TO YOU.
SNAX
...YOU PICK UP A WEEK OLD PAPER IN A FLIGHT LOUNGE and IT'S ALL NEW NEWS TO YOU.
...YOU CALL YOUR CO-PILOT "SWEETHEART".
...YOU INFORM ATC YOU HAVE THE TRAFFIC AT 6 O'CLOCK.

Reprinted from *Professional Pilot* magazine. Illustrations of Shirley Shannon's "Air Lines," *Pacific Flyers*.

New AMT and AVT Programs--Why?

Word around campus has it that AMT and AVT programs are significantly different from programs that were in effect prior to the fall quarter 1990. True, changes have been made and for some very good reasons.

Leaders in the aviation industry advised AATC of the need to strengthen mathematics, physics, and electronics offerings at all technical institutions in order to prepare graduates for employment in the "high tech" world of aviation maintenance. There is also a need to emphasize the importance of general education courses to help people deal with socioeconomic problems, conditions of the work place, employer/employee relations, and ethics in society. Completion of these courses can also enhance opportunities for career advancement.

Other factors considered in developing the new programs were to offer an associate degree in AVT and reduce the time required for a student to complete both programs.

Collegiate scheduling has also been introduced this fall. This will permit more flexibility in scheduling classes for full-time students and allow "part-timers" to enroll in courses as their work schedules permit.

--Mr. Pat Wall
Curriculum Specialist

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Shirley Shannon Gets AATC Nomination

Each year the Alabama College System sponsors a system-wide Outstanding Alumni Competition. AATC's 1990 nomination is Shirley Shannon.

Shirley Shannon, First Officer, Delta Airlines (Boeing 727 jet) was the fifth woman in the free world to be employed as a pilot by a major airline. Not only is she an accomplished pilot, she is also a licensed aviation maintenance technician. She obtained her training in aviation maintenance at Alabama Aviation and Technical College in 1974.

Shirley speaks highly of AATC, "My training at AATC provided solid background for understanding the jet equipment I fly and has served me well in helping to solve in-flight mechanical problems."

In addition to her credentials as a pilot and mechanic, Shirley was a columnist for the *Pacific Flyer*, one of the largest aviation newspapers in the world. *Professional Pilot* magazine illustrated and published several of Shirley's airline humor columns in full page format. She also writes award-winning stories about aviation. According to the editor of the *Pacific Flyer* (1985), "Shirley Shannon has proven to be not only a talented, but also a prolific writer."

In 1986, Shirley developed two publications for the Air Traffic Control Committee of the Airline Pilot's Association, Washington, D.C. The publications-- *Aircraft Wake Fortex-Reduced Spacing Between Aircraft* and *Emerging Approaches and Closely Spaced Parallels*- focused on improving air safety.

In 1987, Shirley assisted Alabama Aviation and Technical College with a media campaign designed to educate women about opportunities in aviation careers. Her picture appeared on AATC billboards in the Birmingham and south Alabama area. Shirley Shannon is an excellent role model for women considering careers in aviation.

At Greater Gulf State Fair

Mobile Campus SGA Awarded First Place

The Mobile Campus Student Government Association (SGA) was recently awarded first place for its Community Educational booth exhibited at the Greater Gulf State Fair in Mobile from Sept. 28-Oct. 6.

The SGA exhibit was judged best in its category for: (1) Originality or striking methods of display; (2) Attractiveness, arrangement, scale and balance, appearance of tables, neatness; (3) Quality of materials and workmanship; (4) Light, color, sound motion or mechanism; (5) Theme or article contributing to theme.

The SGA is to be commended for making this a successful year at the Fair. Thousands attend this Fair annually and the Mobile Campus has gained students each year as a result of their participation.

--Larrie F. Zimmer
AMT Dept. Chairperson/Mobile Campus

APPENDIX I

BUDGET SUMMARY

08/26/91 RUN ID: RSC
08:25:14 RUN BY: SBS
REPORT NO:0.23

090 ALA. AVIATION & TECH COLL
BUDGET TO ACTUAL COMPARISON-COOP.DEM
FOR CALENDAR DATE 08/91 ACCTG MONTH ..
(!((ACCOUNTING MONTH NOT CLOSED)!(

	BUDGET AMOUNT	Y.T.D.ACCT. ACTIVITY	AVAILAB.E EXCL.ENC.	ENCUMB. OUTSTAND	AVAILABLE INC.ENCUM.
COOPERATIVE DEMONSTRATION					
2-01-0000-501-0088 TEMP.SAL	2792.73	6237.15-	3444.42-		3444.42-
2-01-0000-504-0088 PRO.SAL.	28689.97	36262.69-	7372.72-		7372.72-
2-01-0000-505-0088 SUP.SAL.	19676.00	2270.00-	17406.00		17406.00
2-05-0000-504-0088 PRO.SAL.	15494.73	21314.46-	5819.73-		5819.73-
2-01-0000-571-0088 FICA	5576.73	4407.46-	1169.27		1169.27
2-01-0000-573-0088 UNEMP.	149.00	149.00-			
2-01-0000-575-0088 RETIRE.	3676.44	2925.23-	751.21		751.21
2-01-0000-582-0088 MEDICAL	3708.00	2424.00-	1284.00		1284.00
2-05-0000-571-0088 FICA	1126.34	1752.37-	626.03-		626.03-
2-05-0000-573-0088 UNEMPL.	85.00	85.00-			
2-05-0000-575-0088 RETIRE.	1172.51	1613.55-	441.04-		441.04-
2-05-0000-582-0088 MEDICAL	2002.54-	118.33	1884.21-		1884.21-
2-05-0000-601-0088 TRAVEL	2120.07	2011.67-	108.40		108.40
2-05-0000-620-0088 SUBSCRIP					
2-01-0000-639-0088 CONTRACT	1816.87	1816.87-			
2-05-0000-698-0088 INDIRECT	9778.50	9778.50-			
2-05-0000-699-0088 OTHER	4154.80	3979.88-	174.92		174.92
TOTAL	118215.13	116909.50-	1305.65		1305.65

BEST COPY AVAILABLE

	BUDGET AMOUNT	YTD.ACCT. ACTIVITY	AVAILABLE EXC.ENC.	ENCMB. OUTSTAND	AVAILABLE INC.ENCUM.
COOPERATIVE DEMONSTRATION-					
2-04-0000-640-0088 SUBSCRIP	271.93	2031.93-	160.00-		160.00-
2-04-0000-641-0088 MATERIAL	1695.17	1718.05-	22.88-		22.88-
2-04-0000-701-0088 BOOKS	5136.44	5146.45-	10.01-		10.01-
2-04-0000-702-0088 AUDIO-VI	12980.87	12998.07-	17.20-		17.20-
TOTAL	21684.41	21894.50-	210.09-		210.09-

BEST COPY AVAILABLE